

Graph showing the growth of rats fed on a poor rice diet and on the same diet supplemented by milk. The poor rice diet given to the rats closely resembled that consumed by poor rice-eaters in India and the amount of milk added was equivalent to about 8 ounces daily in terms of human intake.

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NUTRITION

BY

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THE importance of the problem of nutrition in India is generally recognized. In this pamphlet the author considers India's food production and Indian diets and points out the defect of the latter. The economic aspects of nutrition and the population problem are briefly discussed. Emphasis is laid on the relation between nutrition and public health and evidence is adduced to show that malnutrition is an important factor underlying the dismal public health situation. Finally the developments and changes in agricultural production which are needed to make the food supply more satisfactory from the nutritional standpoint are considered.

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INTRODUCTION

AN attempt has been made in this pamphlet to survey briefly the problem of nutrition in India as a whole. It is the task of the nutrition research worker to study the nature of human diets, the composition of foods, the diseases to which faulty feeding gives rise, and many other questions. Much research on such subjects has been carried out in India and has shown that the diet of the mass of the population is deficient in quality and often in quantity, and that much ill-health and disease in India are attributable to malnutrition. But it is one thing to define a problem, another to solve it. As soon as the research worker turns from the absorbing study of nutrition in the field, the hospital and the laboratory, to consider how the data he has collected can be used to good effect—i.e. to improve the diet of the people—he finds himself involved in a series of wider problems. Food production, agriculture and animal husbandry, the growth of population, the economic condition of the people, education—all these have a direct bearing on nutrition, and any survey of nutrition which ignored them would be superficial and indeed without value.

This pamphlet, is not specifically concerned with the critical food situation which has arisen during the last two and a half years and has focused general attention on India's problem of nutrition; it deals mainly with the situation as it exists in normal times. In Bengal, famine occurred in 1943 on a scale unknown since the nineteenth century, and in other parts of the country there has been serious food scarcity. The emergency, precipitated by failure of imports and numerous other factors, has shown that India, with her huge and growing population, is normally in a precarious position as regards her food supplies, which have never been sufficient in the sense that the popula-

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tion was abundantly and satisfactorily fed. It is largely an outcome of the situation in normal times, and study of the latter helps in the understanding of how it has arisen.

In the present circumstances the goal of *raising* standards of nutrition may seem remote and almost unattainable. But danger and catastrophe should stimulate vigorous counter-attack, directed not only against hunger and famine but against the lesser degrees of malnutrition as they exist at the best of times. Among the many formidable tasks which will face future Governments in India there is none of greater importance, and perhaps none of greater difficulty, than that of improving the national diet.

DIETARY REQUIREMENTS

Many hundreds of books have been written about nutrition and thousands of scientific papers on the subject are published annually. The professional nutrition worker often finds it difficult to keep in touch with all the research that is being carried out and all the advances that are being made, and the ordinary educated man or woman certainly cannot be expected to do so. A very brief and over-simplified account of certain aspects of the subject may, at this stage of the pamphlet, be of assistance to the reader.

Food is burnt or oxidized in the body as a source of heat and energy. The heat unit commonly employed in the science of dietetics is the large calorie—the amount of heat required to raise the temperature of one kilogram of water through one degree centigrade. The food which we eat contains various constituents which supply energy, or are necessary for the growth and repair of body tissue and for the bewildering vital processes which take place in every organ and living cell. The energy-yielding constituents are proteins, fats, and carbohydrates. Protein, in addition to being used as a source of energy, is needed for growth, repair and vital functioning. The body also

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needs vitamins and certain mineral elements which, being present in foods in very small amounts, do not supply energy but play an essential role in basic vital processes. Water can also be regarded as a dietary essential; without it, life cannot exist at all.

Common foods differ in their content of these various constituents and hence in nutritive value. Cereal grains contain protein and carbohydrate, and are a fairly concentrated source of energy, but they are deficient in certain vitamins and mineral salts. Meat and pulses are characterized by a high content of protein, the protein of the former being of more value to the body than that of the latter. Leafy vegetables and fruits do not supply many calories, but they contain certain vitamins and mineral salts. Root vegetables and tubers, on the other hand, contain a good deal of starch (carbohydrate) and hence supply more calories. Sugar is pure carbohydrate, without protein or vitamins, and hence a defective food. Milk, nature's food for the young mammal, is a good source of protein, vitamins and mineral salts. It is a valuable supplement to diets based on cereals because it is rich in many of the constituents in which cereals are deficient.

A well-balanced and adequate diet must be sufficient in quantity—i.e. yield enough calories—and must supply the various constituents of food in adequate amounts. Much is known about the part played in the body by the various constituents, and the ill-effects which result from insufficient intake (e.g. vitamin deficiency). 'Optimum' dietary standards stating human requirements of calories and constituents have been drawn up by the Technical Commission on Nutrition of the League of Nations, the National Research Council of America and other authoritative organizations. Such standards can readily be translated into terms of common foods and provide a yard-stick for assessing the adequacy of any kind of diet. The so-called 'optimum' type of diet is rich in first-class proteins and in all

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the essential vitamins and mineral salts. In terms of actual foods, this means a high intake of milk and milk products, meat, fish, vegetables and fruit and a relatively low intake of cereals.

The United Nations Conference on Food and Agriculture (1943) attempted to sum up the bearing of the modern science of nutrition on human affairs in the following four sentences:

1. The kind of diet which man requires for health has been established.

2. Investigations in many parts of the world have shown that the diets consumed by the greater part of mankind are nutritionally unsatisfactory.

3. Diets which do not conform with the principles of satisfactory nutrition lead to impaired physical development, ill-health, and untimely death.

4. Through diet a new level of health can be attained, enabling mankind to develop inherited capacities to the fullest extent.

FOOD PRODUCTION

The next question to be considered is how far the food supply of the country meets the needs of the population. If we can calculate the production of various foods, we can divide the figures obtained by the number of consumers and arrive at estimates of intake on a *per capita* basis. These can then be compared with standards of adequate nutrition generally accepted by nutrition workers. This approach is attractive in its simplicity and has been followed by various writers. Actually, existing food production statistics, while providing useful information about the nature of the national diet, are scarcely accurate enough to justify it. In making use of them it is necessary to understand their limitations.

Statistics of the area under the various crops and of total yields are published annually by Provincial Governments, and tabulated by the Central Government. A summary will be found

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in *The Indian Year Book*. Rows of figures are always imposing and invite manipulation by the mathematically-minded. But in some provinces—e.g. Bengal, Bihar, Assam and Orissa—even the area under the different food crops is not accurately known. None of the Indian States, which comprise some 47 per cent of the total land area of India, publish any production figures and statistics of the areas under food crops are available for only 56 per cent of Indian State territory. Outturn in British India is calculated from area by a formula drawn up many years ago which includes a factor—'standard return'—probably needing revision. Ultimately all food production statistics are based on information supplied by village officials unlikely to aim at scientific accuracy. Caution is therefore necessary in using such statistics for any but the roughest estimates. They can give an indication of the general *trend* of food production, but when they are used in careful calculations of *per capita* intake, to ascertain, for example, whether food supply is keeping pace with population growth, misleading results are likely to be obtained. One of the difficulties of the present food situation is the uncertainty about the accuracy of production statistics in 'surplus' and 'deficit' areas. Accurate statistics are the life-blood of government; in their absence all planning for the future is handicapped. Improvement in methods of collecting food production data is of essential importance to India.

With these facts in mind, we can proceed to consider available statistics for what they are worth. The table on p. 8 shows the principal crops of British India in a typical pre-war year, 1937-8.

In the years previous to the war some 80% of total crops were food and fodder crops. The proportion of these to other crops varied from year to year, but only within small limits. Recently, as a result of food shortage, some of the land normally under cash crops has been turned over to food production.

Cereals. The most important food crops in India are the

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CROPS					AREA, IN MILLION ACRES
Food grains (including pulses)	186.8
Fibres (mainly cotton and jute)	18.9
Oil-seeds	...	...	...	...	17.0
Fodder crops	...	...	...	...	10.4
Fruits and vegetables (including root crops)	...	...	...	...	3.8
Sugar	...	...	...	...	3.8
Drugs and narcotics (tea, coffee, opium, tobacco, etc.)	...	...	...	...	2.0
Condiments and spices	...	...	...	...	1.4
Miscellaneous	...	...	...	...	2.5
TOTAL					246.6

cereal grains, and of these rice, wheat and the various millets are the most extensively cultivated. Quantitatively speaking, *rice* is the foremost crop; in British India the area under rice slightly exceeds that under all other cereals put together. The annual yield fluctuates around 28 million tons. Rice is extensively cultivated in eastern and southern India. *Wheat* comes next in order of importance, being the staple crop in most parts of northern and north-western India. The annual yield is about 10 million tons. The *millets* are grown in most provinces and constitute a very important food crop. The total production is approximately 17.5 million tons. The principal millets grown are great millet (*Sorghum vulgare*), spiked millet (*Pennisetum typhoideum*) and common millet (*Eleusine coracana*). *Barley* is a crop of some importance in certain parts of northern India, particularly in the United Provinces. The annual production is about 2 million tons. The production of *maize*, a crop cultivated mainly in the north, is about 1.5 million tons. *Yam*, which is a root and not a cereal, is eaten as a food staple only in the south-west corner of India. The annual yield before the war was estimated as about 1.5 million tons. Within the last two years its production has been considerably extended.

Pulses. Pulses are grown throughout India and form part of

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all Indian diets. They are of value as supplements to diets largely composed of cereals in that they contain various constituents in which cereals are deficient; besides this, they are essential to agriculture since the moderate fertility of the soil could not be maintained without the cultivation of leguminous crops in rotation. The annual yield of pulses may be very roughly estimated as 7.9 million tons.

Nuts and oil-seeds. These are cultivated both as cash crops and for food. They include groundnut, coconut, mustard, sesamum, rape-seed, etc. Except in certain parts of northern India where milk fat (ghee) is reasonably abundant, vegetable oils are the main source of fat in the diet of the majority of the population. Linseed is usually grown principally for export, though linseed oil is consumed as food in certain areas. During the years just previous to the war, 39%, 40% and 60% respectively of the groundnut, castor and linseed crops was exported.

Milk and dairy produce. The total annual production of milk is estimated as about 22 million tons, or 23,000 million litres. Allowing 15% for the needs of calves, this would give a daily *per capita* intake of all milk products, in terms of liquid milk, of about 5 ounces. Consumption varies greatly in different parts of India, being higher in the northern provinces than in the rest of the country. For example, in the Punjab, milk production has been estimated as 19.7 ounces *per capita* daily, and in Madras as 3.6 ounces. In many parts of India milk and milk products are consumed by the poorer classes in negligible amounts or not at all. It is said that 44% of the milk supply is obtained from cows, 50% from buffaloes and 3% from goats. The large goat population is in fact little used as a source of milk. The milk of Indian cows contains 25% to 50% more fat than that of European cows, while buffaloes' milk contains more than twice as much. The higher fat content of milk produced in India compensates to some small extent

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for the low yields per milking animal. About 27% of the total milk supply is consumed as fluid milk. Some 60% of the total outturn is used for the manufacture of ghee, the 'buttermilk' which remains after the partial removal of the fat being usually consumed by the producer.

Meat. The livestock population in India is large, there being nearly one domestic animal per head of population. Meat nevertheless forms a very small part of total food supply, and the amount eaten by the greater part of the population is almost negligible. The consumption of poultry is of no quantitative importance. Wild game does not provide any appreciable addition to the meat supply.

Fish. Indian coastal waters are teeming with fish which represent a large potential source of food supply. Unfortunately it is a source which remains largely untapped, for the application of modern scientific and industrial technique to the fishing industry has as yet scarcely begun. The industry has, however, shown some expansion within recent years. Annual production is estimated at about 6,60,000 tons. The bulk of this is sea fish. In certain parts of the country, e.g. in the delta areas of Bengal, fresh-water fish is a food of considerable importance.

Eggs. The annual production of eggs is estimated as some 2,700 million. This production is small in relation to the population. Eggs are consumed in negligible quantities by the poorer classes in villages and towns. Systematic poultry-farming is confined to a few centres. The eggs laid by ordinary village hens are small in size in comparison with a good Danish or English egg.

Sugar. The production of sugar, refined and unrefined, is estimated as 5.3 million tons, which amounts to approximately 1.3 ounces *per capita* daily. The refining of sugar has become an important industry, employing some 1,00,000 workers. Great attention has been given within recent years to the

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problem of increasing the production of sugar and improving methods of utilization and manufacture. In over 80% of the area under sugar the old canes have been replaced by varieties which give higher yields and are more resistant to disease. India now produces more sugar than any other country in the world.

Fruits and vegetables. In no country can the trend of production of fruits and vegetables be easily estimated statistically. It is not possible to obtain figures of production in small domestic gardens and allotments. The recorded area under vegetables in India is 3 million acres, and production has been variously estimated as 9-15 million tons. Among the most commonly consumed vegetables are *brinjal* or egg-plant and the various gourds. In north India in the cold weather and in hill districts, 'European' vegetables—cabbage, cauliflower, etc.—grow and thrive. Potatoes occupy nearly half a million acres, the main crop being raised in the north in the winter. Production is estimated at 2 million tons. Indigenous leafy vegetables are also grown throughout the country. The area under fruits of all kinds is recorded as 1.8 million acres; of this 60% is devoted to mangoes, 21% to plantains and nearly 5% to citrus fruits (oranges, etc.). Mangoes, a fruit of high nutritive value, are in season for a few months only, during which a glut tends to occur. Other fruits of some importance are guavas, pineapples and jack fruit.

Imports and exports of food in normal times were small in relation to indigenous food production. In 1937-8 exports of rice and wheat were about 1% and 3% of total outturn respectively. In some years exports of wheat were less than half those of 1937-8. Exports of other cereal grains were quantitatively negligible.

The only important import of food was Burma rice, supplemented to a small extent by rice from Thailand and Indo-China, amounting to some 4-5% of the total rice supply. In

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Madras the percentage of imports to total supplies was higher, probably from 10-15%. Travancore, and certain urban areas such as Bombay city, were also to a considerable extent dependent on Burma rice. In quantity, imports of rice in pre-war years ranged from 1 to 2 million tons. Imports of other food grains were negligible. In normal times there was a small import of expensive products such as tinned and cold storage foods, but the use of these was confined to a small section of the population and they were of no quantitative significance. One or two imported food products, such as dried milk and cod-liver oil, were of importance from the standpoint of nutrition because of their valuable nutritive qualities, but negligible as a quantitative addition to the total food supplies of the country.

A deficit of a few per cent in total food supplies does not appear to be a very serious deficit. There are several reasons why the failure of imports has played an important part in producing the present situation. First, when nutritional standards are low there is no margin of safety to allow for even a small reduction in supply. The gap between supply and requirements was further widened by an increase in the latter. Certain sections of the population, e.g. men in the army and war services and connected with heavy war production generally, are consuming more food than before the war. The needs of troops from abroad and prisoners of war must also be met. Some 5,00,000 refugees have entered the country from Burma and elsewhere. Total all-India food-energy requirements have thus increased as a result of the war. Secondly, Burma rice was largely consumed by the poorer classes and its relatively low and steady price helped to peg the price of home-grown rice down to a reasonable level. Thirdly, certain localities were largely dependent on Burma rice and the shortage which occurred in such localities had wide repercussions elsewhere.

Agricultural and import statistics indicate in a general way

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the nature of the Indian diet. They show that the main food of the country is cereal grains and that other foods are produced in relatively small amounts. They show that the *per capita* production of milk is small. Even a rough scrutiny of the food supply justifies the deduction that the national diet is defective in *quality* and does not conform to standards generally accepted by nutrition workers. As regards quantitative sufficiency, the statistical data, as has been suggested earlier, are not sufficiently accurate to justify an assessment.

DIET SURVEYS AND THEIR RESULTS

Further information about Indian diets and their defects has been obtained by diet surveys. In a diet survey a sample of the population is selected and the quantity of all foods consumed by each family over a given period is weighed by trained investigators who make daily house to house visits. Surveys usually last for 10 to 20 days and cover 15 to 30 families. Since 1936 some 100 surveys, covering about 1,500 families and 5,000 to 6,000 individuals, have been carried out. They have been made in both urban and rural areas in widely separated parts of the country, from Kashmir in the north to Travancore in the south. There are, however, considerable areas in which dietary habits have not yet been studied by this method. Surveys have sometimes been repeated in the same area at different seasons.

The data obtained in surveys are analysed in various ways. Intake per consumption unit or adult man value of the principal groups of foods is calculated; the latter include cereals, pulses, leafy vegetables, 'other' vegetables, fruit, milk and milk products, meat, fish and eggs, and condiments, each group having distinctive nutritive properties. A further step is to work out intake of calories, protein, fat, carbohydrate and of certain vitamins and mineral salts. To do this, it is necessary to know the composition of the individual foods of which the diets are

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composed.¹ Investigation of the composition of foods is the first step in studying practical problems of human nutrition.

There are some 400 million people in India and, it is said, 7,00,000 villages, so that the dietary habits of only a very small sample of the population have been studied. Further, the sample is not a random one, either as regards the location of the surveys or the individual families investigated in any particular place. Theoretically, in order to obtain a true picture of Indian diets villages and urban areas for survey should be picked out by random selection, the same process applied in the selection of individual families, and a much larger sample of the population studied. For a number of reasons such a procedure is impossible in practice; to give but one of these, an army of field surveyors would be needed. Field dietary surveys are laborious and exacting work.

In spite, however, of sampling difficulties and the smallness of the sample, the surveys have provided much valuable knowledge about diet in India. Actually more information about dietary habits is available in India than in most countries of the world, apart from northern Europe and America and some of the British Dominions.

Quantity in the Indian Diet

Some of the groups included in the surveys were grossly underfed. For example, the average daily calorie intake per consumption unit or adult man value of a group of poor villagers in south India was 1,700 and that of poor families in a Madras suburb 1,800. A reasonable estimate of the number of calories required by a man engaged in easygoing agricultural or manual

¹ Most common Indian foods have already been analysed and the results will be found in Health Bulletin No. 23, *The Nutritive Value of Indian Foods and the Planning of Satisfactory Diets* (3rd ed., 1941) prepared in the Nutrition Research Laboratories, Coonoor, and published by the Manager of Publications, Delhi.

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work is 2,500-2,600. In 1937 the Nutrition Research Laboratories investigated a cross-section of a village in south India when conditions in the district were relatively normal. In some 50 % of families, calorie intake per consumption unit was below 2,300. Very similar observations have been made among other village groups elsewhere in India, and also in Ceylon.

Can we venture any tentative estimate of the proportion of the population which is underfed in normal times? The author's estimate is 30 %. Admittedly, this estimate cannot be regarded as statistically valid; the data necessary for a statistically valid estimate are not available. But it is based on the study of diet survey records and also on general experience of the condition of the people and agrees with that made by nutrition workers for Ceylon. The degree of under-nutrition is naturally not uniform, either in time or place. There are good areas which enjoy abundant rainfall or efficient irrigation; there are bad areas, with recurrent drought and no irrigation, in which the population lives permanently on the verge of famine. There are areas in which the economic condition of sections of the population fluctuates in accordance with the price of, and world demand for, some cash crop. Major industries supporting thousands of workers have their periods of boom and slump. But, by and large, there is no doubt that a high percentage of the population does not get *enough* to eat, and this is a fundamental fact which all concerned with the task of improving the diet of the Indian people must realize. 'Enough food' takes precedence over 'the right kind of food'.

Quality in the Indian Diet

Rice diets. The diet of the poor rice-eater is very much the same all over India. In addition to his staple cereal he consumes only small quantities of pulses, vegetables and meat. Intake of pulses is from 0.5 to 1.5 ounces daily; of non-leafy vegetables, 2 to 6 ounces; of vegetable oil, less than 1 ounce. Consump-

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tion of meat, fish and eggs does not often exceed 1.5 ounces and as a rule less than this amount is taken. Leafy vegetables are eaten in small quantities, while the consumption of milk is negligible. Fruit is a rare ingredient in the diet. It is to be remarked that there is some disagreement between the calculated production of fruit *per capita*, based on agricultural statistics, and the actual intake of fruit observed in diet surveys. The same can be said about milk.

Millet diets. These are in general similar to rice diets except that millet replaces rice as the main ingredient. In many districts the diet contains a mixture of cereals including one or other of the millets.

Wheat diets. Generally speaking, milk production is higher in the wheat-eating parts of India than elsewhere, and milk and milk products are more prominent in the diet. Intake of pulses also tends to be greater. In their content of foods other than these, wheat diets resemble rice and millet diets. An adequate intake of milk is by no means universal in wheat-eating areas.

Tapioca diets. Tapioca (manioc) is grown mainly in south-western India. In normal times, the diet of the poorer classes in many parts of Travancore is based on both rice and tapioca; it is only rarely that tapioca is the sole basic energy-yielding food. In general, diets containing tapioca are similar to rice diets in their content of such foods as milk, vegetables, meat, etc. Tapioca diets are of interest from the nutritional standpoint because of their deficiency in protein.

Middle-class diets. Middle-class diets differ from those of the poorer classes chiefly in containing more vegetables, fruit and milk products. Non-vegetarian middle-class diets include relatively large quantities of fish, meat and eggs. The most important difference between the diets of the well-to-do and the poor throughout India is probably the greater amount of milk products included in the former.

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Defects of Indian Diets in Terms of Food-constituents

Intake of total protein is usually sufficient when cereals form the bulk of the diet and calorie yield is adequate. Intake of fat, whether in the form of vegetable or animal fat, is almost invariably low. Rice diets are usually deficient in calcium and this is true to a smaller extent of diets based on other cereals (except *ragi*¹). Insufficiency of vitamin A and carotene (pro-vitamin A), and of various factors in the vitamin B₂ complex, is characteristic of most Indian diets. Intake of vitamin C is low, owing to the relatively low intake of fruits and vegetables. Deficiency of vitamin D is of importance in certain areas and under certain conditions. Only diets based on raw machine-milled rice are seriously deficient in vitamin B₁. Beriberi is a serious public health problem only in one considerable area in north-eastern Madras in which this kind of rice forms the staple food of the population. Wheat and the various millets, as usually consumed in India, are not machine-milled and retain the greater part of the outer layers of the grain. Villagers in most rice-eating areas consume home-pounded rice. Machine-milled *parboiled* rice is a staple food in a large part of south India. This kind of rice retains vitamin B₁ after milling and has in many respects the nutritive properties of a whole cereal.

A 'well-balanced' diet recommended by the Nutrition Research Laboratories, Coonoor, contains the following amounts of non-cereal foods per adult man daily: milk, 8 oz.; pulses, 3 oz.; non-leafy vegetables, 6 oz.; green leafy vegetables, 2-4 oz.; fruit, 2 oz.; fats and oil, 2 oz. Indian diets rarely conform to this pattern.

THE ECONOMICS OF DIET

A good well-balanced diet costs more than a poor diet. Foods of high nutritive value, the 'protective' foods as they

¹ Common millet (*Eleusine coracana*)

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are sometimes called, are in general more expensive than energy-yielding foods such as cereals. The cost of a 'well-balanced' diet which provides calories, protein, vitamins and other food constituents in satisfactory amounts can easily be calculated. In pre-war days the cost of such a diet was between Rs. 4 and Rs. 6 per adult per month, or between Rs. 16 and Rs. 24 for a family containing the equivalent of four adult males. The cost of an 'ill-balanced' diet, sufficient in quantity but defective in quality, was about Rs. 10 monthly for a family of the same size. Comparison of these figures with actual pre-war income-levels in India indicates the gulf between possible and desirable expenditure on food on the part of a large section of the population. At the time of writing both price- and wage-levels are abnormal, but the former have risen more than the latter.

Some interesting studies of the relation between income and diet have been made in various parts of India, mainly in industrial areas. In low-income groups the percentage of total income spent on food is high, usually between 50% and 70%, so that even a small increase in the price of food may influence consumption. Percentage expenditure on food falls as income rises. There is normally a rise in the consumption of non-cereal foods—e.g. milk, vegetables and fruit—with increasing income and a corresponding decrease in the percentage of total calories obtained from cereals. This means that, in India as in other countries, increase in income leads to an *improvement of diet in the right direction*. It follows that an increase in the material prosperity of the country—a rise in the national *per capita* income—will *per se* tend to improve standards of nutrition and with these the health of the population. Not that those who can readily afford to purchase a good diet invariably do so. Prejudice and ignorance may operate in the opposite direction. It has been observed, for example, that among ignorant and primitive groups, e.g. aboriginal tribes, an increase

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in prosperity may scarcely influence the consumption of the more valuable 'protective' foods. Middle-class families may consume smaller quantities of leafy vegetables, which are a cheap and nutritious article of diet, than poor families. But the general tendency is there, indicating the close interdependence between food consumption levels and economic conditions.

THE POPULATION PROBLEM

'The land is overstocked with people.' Nitikin, a Russian merchant who travelled in India between 1470 and 1474, is said to have made this observation, the first of many in a similar strain. It has been estimated that at the death of Akbar (1605), more than a century later, the population of India was 100 million, or about one-quarter of the present figure. Nitikin's pronouncement must therefore be regarded as premature.

Much has been written about population in India and all writers are in agreement on one point—that the population is increasing with some rapidity. But as regards the future direction of population growth, and the relation of population to social, economic and public health problems, there are numerous different opinions and no final conclusions. The subject is a difficult and controversial one, but it cannot be ignored by anyone concerned with public health in India and least of all by the nutrition worker. During the last 30 years, from 1911 to 1941, the population increased from 318 to 389 millions and India now contains within her borders almost one-fifth of the human race. In comparison with most countries, India exhibits a high rate of population increase. In the last 20 years there has been a fall in the death-rate, which in the decades 1901-10 and 1911-20 was recorded at 34 per mille, while in 1939 the recorded figure was 22 per mille. Since 1920 the infantile mortality rate has fallen from 195 to 160. These changes are no doubt due to developments in certain fields of public health. The recorded birth-rate, on the other hand, has not appreciably

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altered since 1921, remaining steadily at about 34 per mille. The excess of births over deaths has therefore increased and there is no prospect of immediate slackening in population growth.

The area under food crops in British India can be roughly estimated as 230 million acres (including current fallows). If the population is taken as 300 millions, about 0.86 acre of cultivated land is available *per capita*. It is obviously of the greatest importance for us to know the trend of the ratio $\frac{\text{cultivated area}}{\text{number of population}}$ from decade to decade. The population is increasing rapidly so that a stationary ratio would indicate a substantial increase in the area of land under cultivation while a decreasing ratio would not necessarily indicate that less land was under cultivation than formerly. Unfortunately it is difficult to discover from the published statistics what exactly is happening. The available evidence suggests that the area of land under cultivation is not increasing proportionately to population growth, so that the ratio is *decreasing*.

In the returns for British India, land not under cultivation was classified in 1937-8 as follows: cultivable waste other than fallow, 92 million acres; not available for cultivation (desert, etc.), 92 million acres; forest, 68 million acres. According to the Royal Commission on Agriculture (1926), 'a large proportion of cultivable land other than fallow could in no conceivable circumstances be brought under tillage'. It consists for the most part of land too poor to give economic returns to ignorant ryots without capital or scientific resources. The possibility, however, remains that more waste land could be brought under cultivation by irrigation schemes or the application of scientific methods of land reclamation and soil improvement.

More land is needed to produce a well-balanced diet than an ill-balanced diet of similar calorie value. To produce 1,000 calories in the form of milk requires from twice to four times

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as much land as to produce 1,000 calories in the form of wheat or rice. Similarly, fruit, vegetables, eggs and particularly meat give a lower calorie return per unit area than cereals or tubers. American workers have calculated that 1.2 acres of land *per capita* are needed to produce what they call an 'emergency restricted diet' and 3.1 acres to produce a 'liberal diet'. Agricultural conditions in U.S.A. and India are so different that a direct comparison of these estimates with the 0.86 acre available in British India would scarcely be justified. Clearly, however, the existing relation between population and cultivated land makes it necessary that the bulk of the national diet should be composed of foods giving a high calorie return per unit of land. Any large increase in the production of foods not falling into this category, such as meat or milk, obviously presents great difficulties.

Sir John Megaw, late Director-General, Indian Medical Service, made the following statement in 1933:

'There is every reason to believe that the maximum increase which can be hoped for in the production of necessaries of life will not keep pace with the growth of the population, so that there is a prospect of steady deterioration in the state of nutrition of the people.'

If this view is accepted, efforts to improve the diet of the Indian people are futile. Not only this, but it can be urged, with a show of logic, that such efforts will help to precipitate the crisis of over-population. Public health schemes for the improvement of nutrition give special attention to certain classes in the population—infants, children and women in the child-bearing period—these being the age-groups in which the effects of malnutrition are most severe. The reduction of mortality in these groups would tend to hasten the growth of population; for example, according to the Census Commissioner, a reduction by half in maternal mortality would add six millions to the population in a decade. The same dilemma, if

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dilemma it is, faces all public workers in India. Carr-Saunders, in his work *World Population*, describes the situation in India as a 'tragic picture'. 'There is little occasion', he remarks, 'to emphasize the urgent need for better public health services', but such development may tend 'merely to increase malnutrition and the danger of starvation'.

Let us see what can be said on the other side. First, there is no convincing evidence that the national diet deteriorated during the century up to the outbreak of the Japanese War (the present food situation, due to a variety of causes, including failure of imports, is another matter). The death-rate fell during this period, while increasing shortage of food would tend to raise it. Secondly, it is by no means impossible that a slow but steady revolution in agricultural methods, leading to increased yields, has been proceeding beneath the surface, enabling food supply to keep pace with, or outstrip, population growth. In certain provinces at least, the agriculturist is learning to take advantage of better-yielding varieties of crops which are the result of agricultural research; for example, the greater part of the wheat-producing area in the Punjab is now under 'improved' strains of wheat. An increase in the yield per acre of primary crops has the same effect as bringing new land under cultivation.

Thirdly, the growth of industry is a factor of importance. Highly industrialized countries can maintain good dietary standards, in spite of a dense population, by importing a large proportion of their food supply, which is paid for by the export of manufactured goods or raw materials. Between 1891 and 1931 the proportion of the population living in urban areas did not greatly increase, but in the decade 1931-41, the urban population (i.e. the inhabitants of cities with a population of 1,00,000 or more) increased by 81%. The present war has given a great impetus to industrial development. We are not concerned here with the desirability or otherwise of rapid

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industrialization, which elsewhere in the world has too often been attended by grave social evils. The probability that industrialization will take place in India with increasing momentum has, however, an important bearing on the population problem.

Lastly, there is the experience of other countries in the matter of population growth. More than a century ago Malthus predicted that the rapid growth of population in England would lead to disaster, since agricultural production could not keep pace with it. England is now faced with a rapid fall in population before the end of the century, and the same is true of other Western countries. The birth-rate first declined in the prosperous classes; later the same process became evident in the lower-income groups—it spread downwards, as it were, into the population. There is evidence that in India the first stage has been reached: the well-to-do are having fewer children. We need not speculate on the causes of this commencing decline in fertility; presumably, as in the West, it is due to the use of contraceptive methods. The well-to-do classes are, it is true, only a tiny fraction of the population and the practice of family limitation amongst them can have little immediate effect on population growth. The significant fact is that the first faint beginnings of the process, which in its fully developed stages strongly influences the curve of population growth, are discernible in India.

The Malthusian thesis was that whereas population increases by geometrical progression, food production can increase only by arithmetical progression. This has been completely falsified by events. On the one hand, the growth of population in Western countries has slackened; on the other, the application of scientific methods to agriculture has enormously increased food production. With these facts in mind, the author cannot share the extreme pessimism of certain writers who have surveyed the population problem in India through Malthusian spectacles. It would, however, be folly to minimize the impor-

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tance of the rapid growth of the population and the increased demand for food which it involves.

THE EFFECTS OF MALNUTRITION

India is an unhealthy country with high infant, maternal and general mortality rates and a low expectation of life. The causes of ill-health, disease and death are numerous, including contaminated water supplies, lack of sanitation, bad housing, mosquitoes and flies which carry disease, and malnutrition. It is impossible to estimate accurately what proportion of disease in India has its roots in malnutrition, but there is plenty of evidence that it is one of the most important factors underlying the dismal public health situation.

All those with experience of infant welfare work know that much sickness and mortality among infants are due to the faulty and insufficient feeding of mother and child. In any ill-fed population group, whether human or animal, the newly-born and the very young suffer most severely from the ill-effects of malnutrition. To give an example: in the beriberi area (the Northern Circars districts of Madras) a high mortality in breast-fed infants in the third and fourth months of life, due to vitamin B₁ deficiency, has been recorded; the deficient maternal diet (in this case a diet of raw milled rice) leads to lack of a necessary vitamin in breast-milk. Apart from specific vitamin deficiency, the milk of ill-fed mothers tends to be generally deficient in quantity and quality, so that it cannot meet the requirements of the growing infant.

Mortality in India remains high throughout early childhood. Half the mortality recorded in any given year occurs in children under 10 years, the corresponding figure for England being only 12%. The pre-school child, i.e. the child aged 1 to 5, perhaps suffers more severely from malnutrition than any other section of the population, and the mortality in this group is exceptionally high. When breast-feeding has ceased, children

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of the poorer classes cannot be supplied with cow's milk as a substitute and are often fed on an ill-balanced diet consisting of rice or another cereal, and a few vegetables. Their development is impaired and resistance to such diseases as bronchopneumonia and dysentery—among the most important causes of death in this group—is reduced.

The female death-rate during the reproductive period (15 to 45) is higher than the male, and the excess is largely due to mortality from child-bearing. Estimates of maternal mortality in various parts of India vary from 16 to 24 per 1,000 live births, a very high rate. The anæmias of pregnancy, unquestionably associated with malnutrition, are an important cause of maternal deaths, while co-existent anæmia probably plays a part in the death-rate from puerperal sepsis, the principal recorded cause of maternal mortality.

Diet and Disease

A number of well-known vitamin and mineral deficiency diseases are found in India. These are diseases which are directly due to insufficiency of some necessary constituent in the diet and which can be prevented or cured by the addition to the diet of the missing constituent. In the Northern Circars beriberi in adults is a common disease, leading to much suffering and disability but not often to death. Beriberi in infants, as has already been pointed out, is the cause of many infant deaths in this area. Keratomalacia, due to deficiency of vitamin A, is the commonest cause of permanent blindness in south India; it is also prevalent in other parts of the country. Nutritional edema is commonly seen, particularly among children. Osteomalacia and rickets (vitamin D deficiency) present a formidable public health problem in certain parts of northern India. One of the commonest of deficiency states is a syndrome including stomatitis, dermatitis in the genital regions and sometimes superficial keratitis, which is associated with lack of the B₂

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group of vitamins, and in particular with riboflavin deficiency. Various kinds of anæmia, associated with blood-destroying diseases such as malaria and hookworm and also with malnutrition, are highly prevalent in certain areas and groups. Goitre is another nutritional disease, due to deficiency of iodine in soil and water. It is prevalent in certain Himalayan and sub-Himalayan areas and is a public-health problem of very large dimensions. Severe scurvy is uncommon, except in famine times. Further clinical research will unquestionably reveal other deficiency diseases, at present unrecognized, and clarify the association between diet and such conditions as stone in the bladder, peptic ulcer, various forms of hepatic cirrhosis, tropical ulcer, eclampsia, diabetes and various other diseases.

The diseases mentioned will not mean much to the non-medical reader. If more space were available, a description of each could be given and the reader would learn how beriberi leads to paralysis and heart failure, how in keratomalacia the cornea of the eye is destroyed, how osteomalacia sometimes leads to gross bony deformities and an extreme degree of painful crippling, and so on. In spite, however, of its medical terminology, the preceding paragraph should not fail to give the impression that food deficiency diseases are a problem of public health importance. They must be eliminated by appropriate measures.

In times of food scarcity and famine there is invariably an increase in the incidence of numerous familiar diseases which take their toll in normal times. Even in localized outbreaks of famine, in which deaths from starvation are prevented by the application of the Famine Code, a rise in the death-rate invariably occurs, particularly among children and old people. In view of what is known about the deficiencies of Indian diets, it is not unreasonable to suppose that the incidence of diseases which become more prevalent in times of food scarcity is influenced by diet in normal times. To consider in detail the relation between malnutrition and such diseases as tuberculosis,

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leprosy, malaria, pneumonia and dysentery, would take too long, and indeed the subject has been insufficiently investigated. It is sufficient to say that the body's resistance to many kinds of disease, and its power of recovery after illness, are impaired by faulty and insufficient diet.

The association between diet and disease is of great importance in the sphere of preventive and curative medicine. But malnutrition leads to other evils, which, on a broad view, are perhaps more important. The examination of schoolchildren in India has revealed a high incidence of general malnutrition which has an adverse effect on health and development. In adults also malnutrition impairs general health and vitality and reduces capacity for work.

THE IMPROVEMENT OF NUTRITION

It is often said that until the basic causes of malnutrition—poverty, ignorance, population pressure and so on—are eliminated, nothing of practical value can be done. There is some truth in this view, in the sense that improvement in nutrition and improvement in the general standard of living are interdependent. But to say that all progress in the field of nutrition is at present impossible is quite unjustifiable; much can be accomplished even in the existing economic circumstances if the best use is made of available resources. Further, plans for the future must be laid. The attack on malnutrition is an essential part of the broader campaign to ameliorate conditions of life in India.

An immediate necessity is the spread of knowledge. 'Education in nutrition is not simply a matter of urging the consumer to follow particular dietary practices. It is necessary to spread knowledge of nutrition throughout the whole community so that it may influence governmental action and all who are in a position to influence the consumer in his choice of food.' The quotation is from the Report of the United Nations

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Conference on Food and Agriculture. Administrators, doctors and public health workers of all grades, school-teachers, workers in food, agricultural and development departments—all these and many others must learn about nutrition and its importance and make good use of their knowledge.

All children should be taught simple facts about food and diet as part of health education. The education of girls, who will later be concerned with the preparation of food and feeding their families, is particularly important. The backwardness of education in general is an obstacle to such developments. Here again we come up against the interdependence of progress in different spheres of community life.

The United Nations Food Conference laid stress on improving the nutrition of certain groups in the population which are specially vulnerable to the ill-effects of faulty and insufficient diet. 'Vulnerable groups' include pregnant and nursing mothers, infants, pre-school and schoolchildren and adolescents, e.g. students. In some countries the 'vulnerable groups' have received careful and special attention. The development of maternity and child welfare work, with more emphasis on the nutritional side, the organization of school-feeding schemes, the improvement of diet in boarding schools and hostels—all these are measures which concern the 'vulnerable groups'. Much of value can be accomplished along such lines and all too little has already been done. Take, for example, school-feeding schemes. Here and there in India we find such schemes in operation, but they are often on a small scale and on a temporary basis, and likely to be terminated in any period of financial stringency. No public money spent will give better returns in the long run than money spent on improving the nutrition of growing children and building stronger and healthier citizens.

To develop nutrition on the public health side specialized workers in health departments are needed. In a few provinces and States such workers are employed but the practice is not

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yet general. Nutrition work is an essential part of public health activity and any organizations concerned with public health which do not include nutrition work in their programmes are neglecting their manifest duty. It is to be observed that the modern public health movement is not concerned solely with the prevention of disease. It has the broader aim of creating an environment in which each individual can develop his inherited potentialities as fully as possible—the creation, in fact, of a healthy and vigorous population. In the struggle towards this objective, the improvement of nutrition is of primary importance.

NUTRITION AND AGRICULTURE

One of the basic recommendations of the United Nations Conference on Food and Agriculture concerned the relation between nutrition and agriculture. Agricultural policy must be planned to correct the deficiencies in the diet of the population. The first step, if food production statistics are available, is to estimate the average consumption of the various foods, preferably on a *per capita* basis. The rough data about food intake so obtained should be checked by family diet surveys, and the state of nutrition of the population should be investigated by medical and public health workers. These methods will show the nature of the diet and its deficiencies. Next, an *objective* to be aimed at in improving the diet must be established. A well-balanced diet, satisfactory in quantity and quality, can be drawn up in terms of foods in common use, again on a *per capita* basis. The difference between the amounts of foods needed for the well-balanced diet, and those actually available, is then calculated. Finally, the *per capita* figures must be translated into terms of gross food production, indicating the changes in food supply necessary to provide the population as a whole with a well-balanced diet.

This method of approach can be adopted in India. In spite

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of the inaccuracy of food production statistics, tentative conclusions can be drawn as to the *direction* which agricultural policy should follow. Provided the supplementary non-cereal foods needed for a well-balanced diet can be produced, the existing production of cereals will cover requirements. Cereal production is, however, sufficient only on this assumption and since it is more feasible to increase the outturn of cereals than that of many other foods, agricultural policy should aim at an increased production of cereals. In the absence of other considerable changes in the national diet, an increase of the order of 15-20% may be necessary to cover calorie requirements. In the case of pulses, recorded production is not far below that necessary for a well-balanced diet; the gross production figure divided by the population does not, however, give a figure which conforms with observations made in diet surveys; further, there are considerable differences in the level of consumption in different parts of India. In rice-eating areas in which pulses are most needed to supplement the staple cereal, intake tends to be smaller than in wheat-eating areas. We can tentatively include in our agricultural programme a 15-25% increase in pulse production, with special emphasis on larger supplies in certain areas.

The total quantity of sugar produced in India is equivalent to a *per capita* intake of about 1.3 oz. daily. This is considerably less than *per capita* intake in England and the U.S.A. in peace time. Nutrition workers do not, however, favour a high consumption of sugar, which is a defective food containing only carbohydrate and no protein or vitamins. On the other hand it does, in spite of its nutritional defects, supply calories and calories are needed. Taking a balanced view, we may conclude that a further increase in sugar supplies for internal consumption of, say, 10-20% is desirable, but that in formulating agricultural policy the greater value of other foods must be borne in mind.

Existing *per capita* intake of vegetables is probably about

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3 oz. daily. Here we can unhesitatingly call for a 100% increase, with special emphasis on green leafy vegetables. With regard to fruit, it is difficult to estimate existing production, but 'grow more fruit' can also be included in our programme. Intake of vegetable fat is low—of the order of 0.6 oz. *per capita*—and that of animal fat negligible in many parts of the country. A 200% increase in the production of vegetable fats and oils would be needed to raise the level of fat intake to levels often recommended by nutrition workers.

The most vital need of India, in the nutritional field, is an increased production of milk and milk products. Milk is perhaps the most valuable of all foods and even a 100% increase in supply would scarcely satisfy the nutrition expert. In spite of the formidable difficulties, development of the dairy industry must be one of the major objectives of agricultural policy.

India is by tradition and necessity not a meat-eating country and meat need not be given a prominent position in the production programme. Nevertheless, some increase in the production may be aimed at. On the other hand a large increase in the supply of fish—let us say 100% as an immediate objective—is both feasible and highly desirable. Eggs are valuable but rather wasteful food, since in the conversion of food grains to eggs via the hen the loss of calories is of the order of 93%. The large-scale development of poultry-farming in India scarcely seems a feasible proposition.

It is along such lines that the problem of adjusting agricultural production to nutritional requirements should be approached. But the formulation on paper of 5, 10 or 50 year plans for agriculture is one thing; to give practical effect to such plans is another. The development of agriculture is interlocked with financial and economic considerations, policy with regard to imports and exports, and a whole host of other questions. The nutrition worker can do no more than state what

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he considers the food requirements of the population to be, and leave to others the infinitely more formidable task of devising ways and means by which these requirements can be fulfilled.

CONCLUSION

In approaching the problem of nutrition in India, facile optimism and hopeless pessimism must alike be avoided. On the one hand, it is no use thinking that an easy and immediate solution can be found to a problem which has its roots in the existing social and economic structure of the country. Only untiring effort over a long period of years in many spheres of activity will produce results. On the agricultural side, it must be remembered that there are some 50 million cultivated holdings in India and that, while the problem of increasing agricultural production is astronomic in its magnitude it has also, so to speak, to be tackled on a microscopic scale in respect of individual small farmers. On the other hand, when a task has to be performed, there is little to be gained by over-emphasizing its difficulties. India is not the only country in the world with a serious problem of nutrition. The United Nations Food Conference reported that 'taking the world as a whole, the picture is one of world-wide under-consumption, leading to malnutrition and its attendant evils'. It did not, however, adopt an attitude of defeatism. Its attitude is illustrated in the following passage from a speech made by President Roosevelt to the delegates after the meeting:

'You have examined the needs of all countries for food and other agricultural products, both as they will exist in the short-run period of recovery from the devastation of war, and as they will exist over the longer run, when our efforts can be fully devoted to expanding the production of food so that it will be adequate for health the world over. You have surveyed with courage and with realism the magnitude of these problems and have reached unanimous agreement that they can, and must—and will—be solved.'

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No. 22

RACIAL ELEMENTS IN THE POPULATION

BY

B. S. GUHA



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THE Ethnographical Survey of India under Sir Herbert Risley first published in 1891 the scientific classification of the Indian races under seven heads, namely the (1) Dravidian, (2) Mongoloid, (3) Mongolo-Dravidian, (4) Arya-Dravidian, (5) Scytho-Dravidian, (6) Indo-Aryan, and (7) Turko-Iranian. In the Census of 1931, the author carried out a systematic anthropometric survey of the peoples of India and revised Risley's earlier results. In the present pamphlet he attempts to give in simple language the main ideas held by modern anthropologists on the Indian racial elements. He defines the biological view of Race and describes the relation between racial and cultural groups. Finally he discusses what constitute the racial problems in this country and suggests what he considers to be appropriate remedies.

B. S. Guha has been Anthropologist to the Zoological Survey of India since 1927. He was educated at Harvard, and was elected Vice-President in Physical Anthropology in the International Congress held at Copenhagen in 1938. His anthropological works include Reports on human remains excavated at Nal (1929); Mohenjo-daro (1931 and 1937); and Racial Affinities of the Peoples of India in the Census of India for 1931, Vol. I, Part III (1935).

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RACIAL ELEMENTS IN THE POPULATION

The Definition of Race and its Meaning

BEFORE anything can be said about the Races of India and their distribution, it is necessary to form some idea of the meaning and implications of the term Race, for, as popularly used, it lacks precise definition and not unoften conveys more than one meaning. Its use in the linguistic sense is common, such as the Latin Race, the Aryan Race or the Dravidian Race. It is used also in the sense of a people or nation like the French or the British Race; and instances are not wanting when it is meant to signify religious and cultural groups, e.g. the Hindu Race, the Moslem Race or the Jewish Race. But none of these meanings is correct. Race is a word used in biological sciences in the classification of plant and animal groups in the physical sense alone, and its extension to linguistic and cultural spheres is without any justification, and is the cause of a great deal of confusion of thought. It is therefore desirable to restrict the term to its physical sense divorced from all linguistic and cultural associations. But even as a biological concept it has some special significance when applied to Man which must be clearly brought out before the differentiation of Man into the existing races can be rightly comprehended.

One of the most striking features of the human species is the immense variety of its members. Except in faraway islands, inaccessible mountain tracts or isolated spots in dense jungles, the inhabitants seldom show close uniformity. It is true that in a great measure this multiform picture of human society is due to artificial causes such as differences in dress and habit associated with divergences of personal taste, local custom and religion not found among lower animals. Otherwise the laws that govern the transmission of bodily characters he shares equally with the rest of the animal kingdom. But whereas, in the latter, crossing has

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been within circumscribed limits among smaller numbers and the resultant types fewer, in Man the mixing of blood took place on a much larger scale in wider territories as a result of conquest and migrations. Naturally therefore many more types or recombinations came into being. These were also better preserved as natural selection operated less effectively in his case in weeding out the undesirable or less suited elements.

Since the discoveries of Mendel we know definitely that what the offspring receives is not a preformed miniature replica of its parents, only to be enlarged to become an adult, nor even fully developed characters; but certain closely packed, rodlike bodies carried in the gametes or germ-cells, which they bequeath to their children—to be exact a string of 48 of these bodies in the case of Man, the quota of each parent being exactly half. These are called chromosomes, from the fact that they can be coloured or stained by dyes to be visible under the microscope. These gametic chromosomes, unlike those of the other cells of the body, remain unaffected and are passed on from generation to generation without change, and may be regarded as the 'trust-fund' which the species hands down to posterity. Now the chromosomes are not exactly alike, but differ in size, shape and pattern owing to the presence in them from a few to several hundreds of still more minute entities called *genes*. These are the ultimate factors of heredity, the last units of life, and are responsible for the development of our characters both physical and mental. All the complicated processes that take place between the presence of the genes and the appearance of the characters are not as yet fully understood. We do know however that the genes like the chromosomes retain their individuality from generation to generation and occur normally in contrasting (or allelomorphic) pairs, one of which is usually dominant over the other. They do not blend but, when crossed, sort out or segregate, that is, only one of each pair of allelomorphs enters the gamete. Further, the genes assort at random, meaning that the allelomorph of one pair of genes may occur or combine with the allelomorph of any

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other pair in the gamete. Under special circumstances also, certain changes (probably of a chemical nature) take place in the genes themselves, which are potentially capable of being transmitted. These changes or mutations, the nature and causes of which are still little known, may affect one character in varying degrees or a number of different characters.

It will follow from the above that, when two or more strains differing in a number of characters are crossed, many new recombinations or types different from the original strains will be produced. In the case of human beings with thousands of genes in operation, the number of recombinations is likely to be extremely numerous without taking into account the appearance of new characters by mutations. It may seem therefore that any attempt to classify animal, and specially human, types is bound to be futile, as their stability even cannot be guaranteed. Actually however the situation is not so difficult, for in most cases the genes are very stable and the mean rate of mutation of genes in all animals, though varying greatly, is surprisingly low. Secondly, in most of the fundamental morphological and physiological characters of the species, e.g. the backbone or the main organs of the body, the genetic constitution appears to be homozygous and changes do not take place either by recombination or mutation which are likely to interfere with normal development. For the organism is a delicately balanced mechanism and any alteration which is likely to throw it out of gear seldom occurs, and even when such abnormalities or disharmonious and ill-suited combinations do take place they are quickly weeded out by natural selection. In a state of nature therefore, though a large number of types may be produced, the laws in force see to it that only those of the new types or recombinations which properly adjust themselves to the environment survive, the rest being eliminated gradually. In this way nature maintains a kind of balance and helps to perpetuate the healthy development of the species.

Now if we turn to the origin of Man there can be very little doubt that the human stem differentiated from a brachiating arboreal ape of a generalized *Dryopithecus* type

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during the Tertiary times gradually over a long period, and through a series of earlier forms close to the human line. How close was the relationship is shown by the recent finds of Hellmut de Terra, in the Siwalik Hills, of jaws of some members of this family, like the *Ramapithecus*, which not only exhibit the five-cusped pattern of the lower molar teeth common to this group and men, but very closely approach the human characters in the shape of the dental arch, reduction of the canines and absence of gaps. The great living apes on the other hand diverged from the ancestral line by overspecialization in brachiation (swinging by the arms), and by restricting the use of the hands and feet for grasping purposes became better adapted to tree-dwelling habits instead of moving towards the upright human bipedalism with stable supporting feet, suitable for terrestrial life and progress. The evolution of *Homo Sapiens* or the Wise Man, as modern man flatteringly calls himself, was similarly achieved through many transitional types of Palaeanthropic men such as the *Pithecanthropus*, the *Sinanthropus* and the *Eonthropus* who still retained several apelike features, such as bony brow-ridges and chinless jaws. Their progress was arrested on the threshold of becoming the modern man, and they slowly faded away from the scene either through great climatic changes during the Ice Age, or through their inability to adjust themselves completely to changing conditions. That this differentiation into the present human species was an unitary act in a specially favoured region hardly admits of any doubt, as all its members share the essential human characters which differentiate Man from the other members of the Primate Order and are fertile *inter se*, showing biological unity not possible if they had descended separately from several ancestral types.

Not long after the emergence of Man, dispersal must have taken place. Over-population, the quest for food, internecine wars, or natural forces, drove various bands of men to rove into remote parts of the world. Being subjected to altered conditions of the environment, new mutations arose separating one group from another, the differences being perpetuated by selection and heredity. The primary divisions of

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mankind, e.g. the Negroid, the Mongoloid and the Eurasiatic or the Caucasoid, could only have arisen in this way and they show some geographical correlation even to this day. The changes had not touched the basic traits, in respect of which all members of the human species remain fundamentally alike, but only surface traits which alone show Mendelian separation—such as pigmentation, shape of the hair, nose, face and head, formation of the eye and certain biochemical changes in blood. The genetic barrier between men however broke down in a great measure as a result of migrations and conquests, and men have mixed freely in all parts of the world since the Age of the Glaciers. A large variety of recombinations complicated by additional mutations arose as a consequence and account for the variations now observed, and forge human geography with connecting links through small differentiated graded types from one region into another. Not all the combinations that arose could have survived, the ill-fated or the less adapted ones having perished. It is to these combinations of hereditary traits preserved by selection and common ancestry, distinguishing one group from another, that the term Race is scientifically applicable, though it must be understood that the concept of Race as applied to Man is less rigid than among members of other animal groups who are more completely isolated and interbreed less freely. The classification of human races therefore means only attempts to delimit these groups, using hereditary characters of diagnostic value for purposes of differentiation.

Racial Types in India

The population of the Indian continent viewed in this light would seem to be made up of many strains which entered her territories at one time or another from the older Palaeolithic to the historical periods. Situated however at the southern extremity of the Asiatic mainland, flanked by high mountain ranges on her northern and the upper parts of her western and eastern frontiers, and with the sea separating the shores of the remainder, India geographically formed a naturally protected region into which man could

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move only through gaps in the mountain barriers. One of the results of her topographical conditions was that the races that had come earlier and were in occupation of the country were not destroyed, but pushed south and eastwards and to this day they form some of the main components of the population. Similarly the hills and the forests gave shelter to a large number of primitive tribes who were left comparatively unmolested and had thus better chances of survival, living their own life. Racial types still occurring in the Indian population therefore contain many extremely primitive strains and represent elements from all the main divisions of mankind not found elsewhere to the same extent. These racial groups come from six main races with nine sub-types and are as follows:

1. The Negrito.
2. The Proto-Australoid.
3. The Mongoloid, consisting of:
 - (i) Palae-Mongoloids of (a) long-headed and (b) broad-headed types.
 - (ii) Tibeto-Mongoloids.
4. The Mediterranean, comprising:
 - (i) Palae-Mediterranean
 - (ii) Mediterranean and
 - (iii) the so-called Oriental type.
5. The Western Brachycephals, consisting of:
 - (i) the Alpinoid
 - (ii) the Dinaric, and
 - (iii) the Armenoid.
6. The Nordic.

1 Of these the Negritos appear to be the first-comers and real autochthons of the country. As the name implies, they are diminutive or pigmy members of the Negroid division and probably arose as a result of some of the earliest variations within that division. In common with the members of the group, the chief distinguishing feature is the shape and form of the hair. Instead of straight, wavy or curly hair found in other human races, the hair is separated

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into locks by being twisted either into small or long spirals. The texture of the hair is fine and of a downy or woolly nature. A variant of this kind of hair, seen chiefly among the pigmy or Negrito types, consists of very small, closely set spirals forming into little clumps with vacant intervening spaces, known as 'peppercorn hair'. When a section is made it is found to be oval instead of round as in straight hair. The spiral twist of the hair appears to be due to a pair of genes in addition to those of the ordinary wave or curl of the hair and is dominant over the latter. It is not unlikely that the various forms of spirals, the short closely set, the long, and the peppercorn type are all due to separate hereditary factors and rose as subsidiary mutations within the main Negroid stock. The other characters which distinguish the Negrito are certain infantile features, like pigmy stature, the mean being below 5 feet, small head, bulbous forehead, smooth brow-ridges and feeble chins. Negritos are deeply pigmented but not quite so dark as the true Negroes and the head-form is more variable, round, medium and long heads all occurring. Their limbs are delicate, with arms long in relation to the legs, as contrasted with the tall Negroes whose lower extremities are specially elongated. In some of the Negrito tribes in south-western Africa, such as the Bushmen and Hottentots, certain special features have developed known as steatopygia—great accumulation of fat in the buttocks and upper portion of the back of the thighs of women, similar to deposits of fat in some species of sheep. This seems to be a sex-linked character preserved by sexual selection.

Outside Africa, the Negritos are found in New Guinea, the Philippines, the Malay Peninsula and the Andaman islands. In the mainland of India the type was not detected, though stray cases of frizzly hair were reported from time to time. In recent years,¹ however, a survey of the interior of the hills of Cochin and Travancore revealed the presence of frizzly-haired individuals among the Kadars and Pulayans living in these hills. They probably exist also

¹ B. S. Guha, *Nature* (1928), p. 121; (1929), p. 123.

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among the Irulas and primitive tribes of the Wynaad. At the present time they are not found in any strength but only as remnants of an ancient race pushed into the hills of south-western India where they were partially absorbed by other tribes, but in more isolated inaccessible tracts such as Perambiculum they were segregated and preserved their features. Their head-shape is not round like that of the Andamanese but varies from medium to long. They also differ in possessing long spirals of hair, though short spirals are not altogether wanting. Their skin-colour ranges from dark brown to dark chocolate-brown approaching black. The face is short and protruding and the nose flat and broad. The lips are thick and everted and stature short. (Figs. 1-3.)

In the form of the head and structure of the hair the Indian Negritos resemble the Melanesian pigmies rather than the Andaman islanders, in whom the peppercorn type of hair and steatopygia have been found to occur. How far the Negritos extended over other parts of India in ancient times it is not definitely known, but judging from their presence among the Angami Nagas as reported by Hutton¹ and sporadic occurrences of individuals with spirally-twisted hair among many aboriginal tribes as far north as the Rajmahal Hills,² it is possible that they had a wide distribution at one time and extended far north and eastwards. Some offshoots probably moved into the western parts of the Malay Peninsula and still survive there in the Semangs and Sakais, who have medium head-shapes and have a number of designs in their combs identical with those found among the Kadars.

2 Besides the Negritos, the aboriginal population of Peninsular India contains another primitive element which is widespread and probably arrived soon after. In stature, shape of the head, protrusion of the facial parts, broad flat nose, fleshy everted lips and skin-colour approaching black, the differences between the two are slight. But

¹ J. H. Hutton, *Man in India* (1927), p. 7.

² S. Sarkar, *Nature* (1936), p. 37.

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this type retains less of the infantile characters of the forehead and brow-ridges, and the delicate nature of the limbs is not seen. What distinguishes it however most significantly is the absence of frizzly or woolly hair. Its hair is wavy, and even curly in many cases, but the wave or bend is never coiled spirally. This element is closely akin to the Australian tribes but is of a more generalized type and has consequently been termed Proto-Australoid. It is true that in the typical Australian the brow-ridges are extremely stout, the nasal root very sunken, and there is an abundance of bodily hair not usual in the Indian tribes, but there is a large number (especially among such tribes as the Chenchus, Malayans, Kurumbas and Yeruvas of South India and among many members of the Munda, Santal and Kol groups) where these characteristics are also marked. A careful comparison of the tribes of southern India with those of Ceylon, Indonesia, Melanesia and Australia discloses a regular gradation of these traits from a moderate degree to their most developed form in the last.

It seems probable that the hereditary factors responsible for these characters were carried by the race in general and developed under certain special conditions. If, as it is likely, Australia received her aboriginal population by migration through Ceylon and Melanesia from southern India, where these characters had already evolved, their further development in the open Australian deserts must have been due to isolation and inbreeding. The similarity of blood-group distribution with high percentage of the agglutininogen A between some of the Australian and South Indian tribes lends further support to this view.

However that be, the Proto-Australoid type is the most dominant element at present in the tribal population of southern and central India as well as among semi-hinduized tribes further north. The so-called 'exterior castes' of Hindu society throughout the greater part of the country are also mainly constituted from this racial strain. We have no precise information as to when this race first came into India. It is found among the prehistoric skulls in the Tinnevely district, and from references in early Sanskrit literature to

EXPLANATION OF FIGURES

THE NEGRITO TYPE. 1. Andamanese with short spirals. 2. Kadar of Cochin Hills with short spirals. 3. Kadar of Cochin Hills with long spirals.

THE PROTO-AUSTRALOID TYPE. 4. Pulayan woman of Travancore. 5. Urali woman of Travancore. 6. Baiga from Rewa.

THE PALAE-MONGOLOID TYPE. (i) *Long-headed*. 7. Sema Naga of Assam. 8. Limbu of Nepal. (ii) *Short broad-headed*. 9. Lepcha woman of Kalimpong.

THE TIBETO-MONGOLOID TYPE. 10. Tibetan of Sikkim.

THE PALAE-MEDITERRANEAN TYPE. 11. Tamil Brahmin of Madura. 12. Nair lady of Cochin. 13. Telugu Brahmin of Vizagapatam.

THE MEDITERRANEAN TYPE. 14. Nambudri Brahmin of Cochin. 15. Maratha lady of Indore. 16. Brahmin of Allahabad. 17. Bengali Brahmin girl of Calcutta.

THE ORIENTAL TYPE. 18. Punjabi Chattri of Lahore. 19. Pathan of Bijaur (N.W.F.P.). 20. Nagar Brahmin of Gujarat.

THE ALPO-DINARIC TYPE. 21. Brahui of Baluchistan. 22. Bania Kapol of Bhavnagar (Kathiawar). 23. Bengali Kayastha of Calcutta. 24. Tamil Chetti of Madura.

THE NORDIC TYPE. 25. Kho of Turiko (Chitral). 26. Khalash of Rambur (Chitral Kaffiristan). 27. Red Kaffir of Brihmital (Chitral Kaffiristan).



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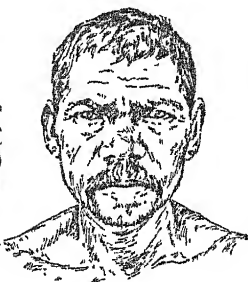
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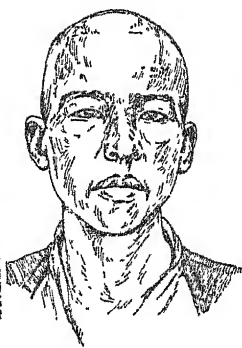
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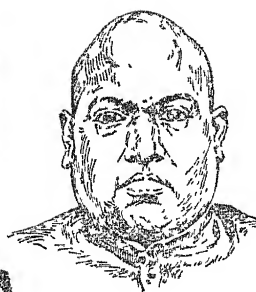
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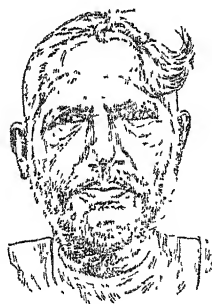
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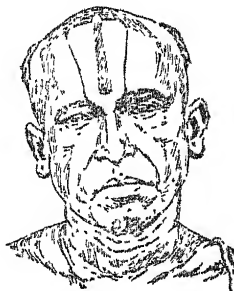
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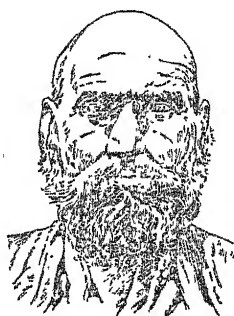
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'Nishads',¹ where they are described as noseless (*anāsh*) with dark skin-colour and peculiar speech and habits, there can be no doubt that the Proto-Australoid tribes were meant. In Figs. 4-6 this type is illustrated with marked development of the brow-ridges and sunken root of the nose.

3 The Mongoloid race is distinguished from others by very scanty growth of hair on the face and body, general flatness of the facial parts with great prominence of the cheek-bones and rather arrested development of the nasal skeleton. What differentiates this group most strongly however is the peculiar shape of the eye. Among human beings of many races what is called the 'almond-shaped' eye sometimes occurs with a rounded inner and pointed outer opening. The outer opening is also placed on a somewhat higher plane, giving it an oblique shape. This type of eye, though not exclusive to it, is very common among the Mongoloid race. In addition to this trait the Mongoloid eye possesses a loose fold of skin covering the inner canthus (the angle), giving it a half-open, slit-like appearance. These traits are due to separate pairs of allelomorphic genes and have been found to be of dominant character. These peculiarities of the eye-shape, however, are not found to the same extent among all Mongoloid races, some members possessing them in a greater degree than others. They have been observed to occur with marked intensity among the Tibetan and the Chinese, and in some of the races of eastern Siberia such as the Gilyaks, the Tungus and the Yukagirs; the percentages of complete folds being as high as 85, 62 and 60 respectively.

(i) The Mongoloid group in this country contains three racial types of which the *Palae-Mongoloids* are of more primitive nature and do not exhibit the characters so conspicuously. (a) These are characterized by medium stature with a skin-colour varying from dark to light brown. The eyebrow region is not marked and the face is short, with prominent cheek-bones. The nose is medium, but of low elevation and shows the arrested development usual among

¹ R. P. Chanda, *The Indo-Aryan Races* (1916), pp. 4-8.

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Mongoloid groups. The hair is scanty both on the face and the body, and the eye-sockets are slanting. The epicanthic fold is not very marked and usually occurs with lesser frequency. What distinguishes this group from other Mongoloid tribes, however, is the form of the head, which is not round, but varies from a long to a medium shape with the occipital portions bulging outwards—a characteristic peculiar to long-headed races. This Palae-Mongoloid strain is found in the sub-Himalayan region as the more ancient stratum of the population and forms a dominant element in the tribes living in Assam and the Indo-Burmese frontiers. It extends far into Yunnan and south-eastern China.

The other Palae-Mongoloid type is (*b*) a short broad-headed element with darker skin-colour and rounder face. Both the obliquity of the eye and the epicanthic fold are more marked in this type. It is of a decidedly less primitive character and occurs chiefly in Burma and in some hill tribes of the Chittagong district, such as the Chakma and the Magh.

(ii) The Mongoloid group which shows the racial characters in the most developed form is undoubtedly the Tibeto-Mongol element, resembling the former in the shape of the head but of a much more advanced type. It is characterized by tall stature with light skin-colour and marked absence of hair. The epicanthic fold is strongly marked and the eye-slits are slanting. The face is not short, but long and flattish. The nose similarly is long but the elevation is low. Like the body, the head is massive and the absolute dimensions of the head are larger than in any other race living in India. This type is found in Sikkim and Bhutan and must have infiltrated from Tibet in comparatively later times.

In Figs. 7-10 the three Mongoloid types are illustrated.

The three racial stems mentioned above, namely the Negrito, the Proto-Australoid and the Mongoloid, with their sub-types, constitute the tribal population living in this country.

4 In addition to the racial elements described above the general population of India contains strains from several progressive races, of which those belonging to the Medi-

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terranean stem—so named from its association with the Mediterranean basin—are the largest. There is not one uniform type of this race but rather a number of closely graded types characterized by the common possession of moderate stature, long head, slightly built body and dark complexion. This group was probably differentiated in the southern steppes of northern Africa and the adjoining Asiatic mainland, and, following the northward movement of the storm-zone at the close of the Ice Age, drifted both westwards and eastwards. We can distinguish three distinct types of this race in India, of which (i) the first and the most ancient one closely resembles the Proto-Egyptian type and may be called Palae-Mediterranean in the absence of a more appropriate name. It may be described as medium-statured, dark-skinned and of slight build. The head is long and narrow and the vault high, with bulbous forehead and projecting occiput. The face is usually narrow but often disharmonious, and the chin pointed but weak. The nose is small, prominent, rather fleshy and moderately broad. There is scant development of hair on both the face and the body. This type must be one of the earliest of the Mediterranean stem to be differentiated, and retains some traits (e.g. deeply pigmented skin, higher cranial vault and proportionately longer legs) found in common with the Negroid races. We have no definite evidence of the first advent of this race to India, but among the human skeletons found in burial jars at Aditanallur and in the cairns of the Deccan, belonging probably to the beginning of the Christian era, it is the prevalent type. It is likely, however, that it arrived much earlier and introduced the Megalithic culture in late Neolithic times. Subsequently it dispersed towards the south to form the dominant type among the Dravidian-speaking peoples. Freiherr von Eickstedt,¹ who led the German-Indian Anthropological Expedition into this country during 1926-9, calls it the Melanid race, considering it to belong at its basis (though now greatly intermixed) to the Melanesian branch of the Negroid race. He counts the

¹ Von Eickstedt, *Zeits. Morph. Anthr.*, vol. 32 (1933), pp. 92-6.

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20 million Tamilians among its descendants. There seems little justification for this view, for apart from skin-colour, its other traits are not peculiar to the Negroes. It has neither the short spirals of the African Negroes nor the frizzly hair of the Melanesians. Its hair is wavy or curly but never spirally curved except when it possesses some Negrito genes (not uncommon in South India).

We know that skin-colour is caused by the presence of pigments in the epidermis, produced by the action of multiple hereditary factors for the protection of the underlying tissue against the ultra-violet rays of the sun. There is more than one pigment in most races, with not merely quantitative but qualitative differences. The pigment-producing genes, however, act in co-operation with environmental conditions and some degree of alteration in their expression is possible by altering the conditions. It is well known that moderately pigmented people become somewhat lighter after long stay in temperate regions. Similarly they acquire a deeper shade after living in tropical countries. Under the persistent heat of southern India the genes producing dark pigments probably were more stimulated than those producing lighter tints, and the skin-colour of this already-pigmented race might have received a deeper shade in a similar way as the Negroes, without genetic relationship between the two.

(ii) This older and more basic stratum of the Mediterranean group must be distinguished from another closely akin to the European type, which entered this country later, and whose remains have been found in large numbers in the Chalcolithic sites of the Indus valley and further east. It is probable that this was the race responsible for the development of the Indus civilization and subsequently dispersed by the 'Aryan'-speaking Vedic invaders to the Gangetic basin, and, to a smaller extent, beyond the Vindhya. It forms today a dominant element in the population of northern India and an important constituent of the upper section of the people of the rest of the country. This type possesses medium to tall stature and lighter skin-colour, the shade varying from dark to light olive-brown in different parts of the country. The head-shape is also long but the

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cranial vault is lower and the forehead is more arched. The face is long and the chin, though still weak, is better developed. The nose is narrow and prominent and not so fleshy as among the other group. The body is of slender build, but the growth of facial and bodily hair is much more pronounced. The hair and eye-colours are of dark brownish tints leading to black. One of the peculiarities of the Mediterranean race is the presence of extremely large open eyes not found to the same extent in other races. In Figs. 14-17 are given the portraits of four persons, two women and two men from the United Provinces, Bombay, Bengal and Malabar, belonging to this type.

(iii) The third and the latest of the Mediterranean strains to enter India is the so-called Oriental race of Fischer, which is commonly mis-called Semitic from its association with the speakers of that language though not entirely confined to it. It is very close to type (ii) except in the formation of the nose, which is unusually long and often convex—a dominant characteristic, which, combined with inbreeding, accounts for the persistence of nostrility among the Jewish people. The skin-colour is lighter among this race than in any other group of the stock, though in this country darker shades are common. The chief concentration of this race has always been in Asia Minor and Arabia, from where it must have come to India. It is strongest in the Punjab, but throughout Sind, Rajputana and the western United Provinces it is common. In the rest of the country also the type is not unusual (see Figs. 18-20).

5 More than one type of broad-headed races have entered into the composition of the Indian people besides the Tibeto-Mongol strain. They belong respectively to the groups of Western Brachycephals (broad-heads) designated 'Alpines' (from their association with that European region), 'Dinarics' (from the Dinaric Alps which stretch from Dalmatia to Croatia), and Armenoids.

The differentiation of broad-headed races is a comparatively later event in human history. All the early types of which we have any evidence are long-headed. There is

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apparently some correlation of the broad-heads with highlands, from which it has been surmised that the mutations giving rise to them have taken place in mountainous countries, probably somewhere near the Central Asiatic mountain axis, where conditions favourable to the growth of the head in the transverse rather than the longitudinal direction existed. It is likely that more than one mutation took place, one among the Mongoloid races in the Tibetan plateau or further north, and one or more among the Eurasiatic tribes living in the highlands between south-western Siberia and Armenia. Broad-headedness is a dominant character and accounts for the increasing brachycephalization¹ now observed among European races. (i) The characteristics of the Alpine broad-heads are medium stature, rather short, wide head with rounded occiput, round face and prominent nose. The complexion is lighter than that found among the Mediterranean races and there is an abundant growth of hair on the face and the body. The body is thick-set, strongly built and of the typical 'John Bull' type. (ii) In the Dinaric, the stature is taller and the skin-colour somewhat darker, especially the tints of the hair and the eye. The head is not so broad but very short, with flattened vertical occiput. The forehead is rather receding and the cranial vault very high. The face is comparatively long and the nose extremely long and more often convex, with the tip sometimes bending sharply towards the upper lip, giving it a 'hawk' shape. The shape of the occiput and the form of the nose are peculiar features of this race, and in the sub-variety known as (iii) the Armenoid, these are even more marked. In none of these types are the Mongoloid characteristics present; and in fact, in the abundance of hair and development of the nose, the Dinaric and the Armenoid are farthest removed from them.

In Europe, the appearance of the broad-heads synchronizes with the New Stone Age. In India we have no such early testimony of the race, but in the Indus valley during Chalcolithic times, and later in the Iron-Age sites of Tinnelly and Hyderabad, we find the presence of both the

¹ R. B. Dixon, *The Racial History of Man* (1923), pp. 512-13.

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Alpinoid and Dinaric types of heads. The investigations of Bertram Thomas¹ have shown the existence of brachycephalic races in southern Arabia of which the 'Omani' has a flattened occiput. It is likely that these broad-heads drifted along the western littoral from southern Baluchistan through Sind, Kathiawar, Gujarat and Maharashtra into Kannada and Tamilnad and thence into Ceylon, leaving Malabar and Andhra unaffected.

An eastward movement seems to have gone early into the Gangetic delta leaving a distinct trail in Central India, eastern U.P. and Bihar. A subsidiary drift of the Dinaric race probably took place from the north-western Himalayas into western Nepal. It is present all along the region from the Kho and the Burusho of Chitral and Gilgit to several racial groups in Nepal, though somewhat intermixed with a local variant of the Oriental race.

The Dinaric type is well marked in Bengal and Orissa, mixed in varying degrees with the Mediterranean group, and in Kathiawar, the Kannada and the Tamil countries. It occurs in its purest form among the Coorgis. In Gujarat the broad-heads are predominant, but the wider forehead associated with shorter face among the Gujaratis points towards a greater admixture with the Alpinoid element. In Maharashtra it has mixed largely with the long-headed types (see Figs. 21-4).

The Parsis of Bombay are also broad-headed but appear to be more allied to the Armenoid type of Asia Minor than to their Gujarati neighbours, from whom they differ in blood-group distributions. Their blood-groups show resemblances to those of the Syrians and Armenians,² but they are very distinct from the Guebres (the remnants of the old Persian population professing Zoroastrianism, still surviving in Kala Gebri near Teheran), who are all long-headed. It is possible, as Dixon³ suggested, that the Parsi emigrants to Gujarat came from a broad-headed element of the Persian population who

¹ *Arabia Felix*, pp. 301-33.

² E. W. Macfarlane, *American Naturalist* (1942), p. 525.

³ *op. cit.*, p. 310.

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were converted to Zoroastrianism, while their brethren in faith, the Guebres, who remained at home, represented the older racial stock.

6 The last great race movement into India was associated with the Vedic invaders who belonged undoubtedly to the Northern Steppe folk: moving south-westwards in a great racial wave along with the Kassites, they swept into north-west India somewhere during the second millenium B.C. It is possible that this type was first characterized in the Eurasiatic steppelands, between south-eastern Russia and south-western Siberia, from some of the more powerfully built long-headed races who drifted towards the north-east with the retreat of the ice sheets. In the *kurgans* (burial mounds) of southern Russia and in the Minusinsk region of the Upper Yenisei of the early Bronze Age, skeletons conforming to this type have been found, together with evidence of horse-sacrifice. Chinese chronicles also speak of a tribe called the Yuechi who established the Tokharian state in eastern Turkistan in the centuries preceding the Christian era. They were described as light-skinned and red-haired, and as Tokharian has been found to belong to the *centum* group of the Indo-Aryan languages, closely related to Greek and Latin, the Tokharis or Yuechis can reasonably be supposed to have been Indo-European-speaking people.

Very little archaeological evidence is available regarding the early Indo-European-speaking invaders of India, apart from the finds in the Kurram valley and the Gangetic basin identified by Heine-Geldern as Indo-Aryan and belonging to 1200-1000 B.C. From references in ancient Vedic literature, their northern home, light skins and hair-colours seem indisputable. The human remains recently uncarthed at the Dharmarajika monastery at Taxila, which was sacked by the White Huns in the fifth century A.D., are probably attributable to them. They are distinguished from the skulls of other long-headed races so far found in India by larger size (the mean cranial capacity being as high as 1552 c.c.), lower cranial vault, long face and powerfully built jaws. At the present time the type is found very prominently on the

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north-western frontier among the Pathan tribes, mixed with Oriental and Dinaric elements. Among the tribes living in the valleys formed by the Upper Indus and its tributaries the Swat, Panjkora, Kunar and Chitral, it is the dominant type, especially among the Kaffir tribes south of the Hindukush mountains. In the Punjab and Rajputana and among the upper classes of northern India it is also present, but marked by increasing admixture with the older long-headed races of the Mediterranean stock. There is also a sprinkling of it in western India and as far east as Bengal. Among the Chitpavan Brahmins of Maharashtra it is strongly marked, mixed with broad-headed races. The characteristic features of this race are a very powerfully built body and tall stature (not approached by any other race with the exception of the giant Negroes and one or two others), long massive head with arched forehead, and protruding occiput. The eyebrow regions are moderately marked, the face long and the chin strong. The nose is very narrow and straight and the bridge high. What distinguishes this race most noticeably however is the comparative absence of pigment in the outer surface of the body, which gives the skin its so-called flesh colour and to the hair and the eye the much-admired gold-blond and blue tints respectively. (See Figs. 25-7.)

As we have seen, the presence of pigments of different degrees and kinds is due to the operation of multiple hereditary factors which have arisen at different times and places as a result of genetic changes or mutations in response to varying environmental conditions. Just as, under tropical conditions, the black skin of the Negroid races has resulted from the ancestral brown forms, through the deposit of additional quantities of pigment grains, and by the production of darker kinds of pigments, similarly a reverse action in some of the Northern Steppe folks has resulted in the disappearance of pigment grains under the skin by defective variations or deficiency mutations. Why these mutations arose in some races and not in others, such as the Lapps or the Eskimos who also live under temperate conditions, it is difficult to say—possibly the darker pigments were not originally present in them, or for some special physiological reasons which did

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not occur in all. The absence of pigment grains is not uniform, however, and this accounts for the various shades of skin, hair and eye-colours found in some of the Eurasiatic and north European races. The skin may be light brown, white, pale white or 'flesh' coloured, the hair light yellowish, gold-blond, silver-grey or ashen-grey, and the eye light brown, hazel, grey, green or blue. Among the Finns and allied Baltic people the presence of an additional red pigment gives a red or rufus tint to the hair.

Among the races living in south-western Siberia and in the valleys of the north-western Himalayas the process of depigmentation has not gone so far as in northern Europe. Here, though the skin-colour is prevailingly rosy-white, shades of brown and light-brown also occur. In the eye, the most common tints are medium, ranging from light brown to hazel, though an appreciable number are grey-blue and blue. Similarly the hair is usually of a brownish shade though a small percentage of light yellowish and red tints are seen, particularly among the Kati tribes of Kaffiristan. Earlier visitors like Leitner, Biddulph, Ujfalvy and Robertson mentioned 'blond' and 'golden' hair among some of the Hindukush tribes. Even if a few individuals show these tints, it is certain that the prevailing hair and eye colours are darker, and there is a much smaller percentage of the lighter shades than among the north European races; among the Swedes, for instance, the blond type forms 49 per cent of the total population. In the European races likewise there is some correlation between the tints of skin, hair and eye. As however the genes determining the colours of the skin, hair and eye Mendelize (i.e. assort) separately, there cannot be any question of true linkage between them, and their close association is probably due to some conditioning factor which favoured their appearance simultaneously in Europe but which was not operative to the same degree in the Asiatic group. However that may be, the high percentage of blonds in northern Europe may be explained by close inbreeding in the Baltic regions, causing an unusually high rate of this deficiency mutation.

In the tropical conditions of the northern Indian plains

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the lighter skin, hair and eye colours are not suitable, as they afford less protection from the injurious radiations of the sun. Consequently these characters were gradually eliminated by natural selection in the invaders who came from temperate climates. An interesting development therefore took place in these people in India. They retained some characters typical of the race, such as the build of the body, the tall stature, and the long head, but they slowly lost the genes responsible for lighter complexion. That these genes are only masked in many cases is proved by the presence of a small percentage of light-eyed and light-haired people throughout northern India, from the Punjab to Bengal. In the Chitpavan Brahmins of Maharashtra the proportion of light-eyed people is considerable, being almost 10 per cent.¹

The above are the main racial groups which have gone to make up the composition of the Indian people, and though ethnic zones can be demarcated according to the preponderance of the groups, as may be seen from the map inside the cover, it must be clearly understood that no rigid separation is possible as there is considerable overlapping of types. From a broad point of view however a Nordic territory in north-western India, mixed with Mediterraneans and Orientals, can be distinguished from a territory in Peninsular India containing the older Palae-Mediterranean element. On both sides of this are the domains of the Alpo-Dinarics, mixed no doubt with other types. The primitive darker elements have come in everywhere and, with blood from other strains, chiefly Palae-Mediterranean, they constitute the lower stratum of the population. The Mongoloids occupy the submontane regions of the north and the east, but various thrusts from them have gone deeply into the composition of the people.

¹ The Chitpavan Brahmins did not migrate from Palestine as some people with more zeal than knowledge want to prove. They were probably one of the bands of northern invaders who became isolated in the Deccan during the course of their wanderings.

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Racial Groups and Linguistic and Cultural Divisions

The racial groups in India do not coincide with linguistic and cultural divisions. Languages and social customs depend on acquired characteristics and are subject to constant changes. There is, however, a rough parallelism between the geographical distribution of tribes and their linguistic divisions. The Dravidian-speaking people live in the south below the Vindhya; the central highlands are in the main occupied by the Austric-speaking tribes; the northern valleys of the Indus and the Ganges and the western and eastern portions are populated by Aryan-speaking races. The sub-montane regions on both the northern and eastern peripheries are inhabited by tribes speaking languages belonging to the Tibeto-Chinese family. Within each of these groups there is a diversity of racial types, no one of which can be correlated with the language spoken in that group. For instance, the Dravidian languages are spoken not only by the Negrito Kaders, Pulayans and Irulas whose original tongue we do not know, the Proto-Australoid Chenchus, Malsers and Gonds, but also by the Palae-Mediterranean Tamilians and Andhras and the Alpo-Dinarics of the Carnatic and Coorg. Aryan languages are the mother-tongues of people among whom all the racial types may be counted—the Nordic Red Kaffirs, the Proto-Australoid Bhils and Palae-Mongoloid Gurkhas. The Tibeto-Chinese languages are spoken by Mongoloid tribes belonging to all the racial elements within that division. Similarly the Austric languages belong not only to the Palae-Mongoloid Khasis of Assam but also to the Mundas, Santals and Hos of central India and the Negrito Semang and Sakai of the Malay peninsula. There is therefore no justification for giving a racial meaning to such terms as 'Dravidian' and 'Austric' as Jean Przyluski and some of his followers have done.

Just as it is difficult to find out in every case the racial groups which brought with them the languages now spoken in India, similarly we have not enough material to appraise correctly the contributions of each individual race to the complex fabric of Indian culture. What the Negritos con-

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tributed we do not know, but there is some ground for thinking that the cult of the *figus* tree originated from them. To the Proto-Australoid races may perhaps be attributed a large share of totemistic rites, exorcism, food taboos and magical beliefs still obtaining in Indian life. The ban on commensality and intermarriage which forms the basis of the caste system must also owe its origin to them. The use of silk, tea, rice, paper, terraced cultivation, communal houses, head-hunting and betel-nut culture may be mentioned as the contributions of the Mongoloid races. To one of its branches, namely the Oceanic, we owe also the introduction of the outrigger canoe, the coconut and the pineapple. The Palae-Mediterraneans probably brought pottery, Megalithic culture, with its associated fertility rites and human sacrifice, and it seems likely that they were responsible for introducing matriarchal institutions and the high position of women in peninsular India. The Mediterranean race proper, as far as can be judged, developed the civilization of the Indus valley, and to it we owe the largest content of the present-day Indian religion and culture. Most of the common domestic animals, river transports, garments, the structure of houses, the use of brick, painted pottery and the building of towns are due to them. Astronomy and the Indian script are also their contributions. The particular share of the Alpo-Dinaric races we cannot assess, but if the contention of the late Ramaprosad Chanda be right, then the development of the Bhakti cults and religious emotionalism of Gujarat and Bengal must be attributed to them.

The Nordics brought horses, probably iron and the best variety of wheat, namely the 48-chromosomes group, if (as Vaviloff thinks) it originated in Afghanistan and was introduced into India from there. The use of milk, alcoholic drinks, dicing, chariot racing, and tailored garments were due to them. They introduced patriarchy in Indian social life, but their chief gift was undoubtedly 'the Aryan language'—the most delicate and flexible vehicle of thought. They gave the shape into which the contributions of other races were fitted. Their chief contributions, however, were in the domain of thought rather than in material culture. Epic

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poetry, the concept of Cosmic Order or Rta, lofty ethical ideas and philosophic thoughts, and abstract natural science were their gifts in the building up of the Indian civilization, and it would be historically wrong and scientifically inaccurate to deny that they have been directly or indirectly responsible for most of the glories of Indian literature, philosophy and art.

Racial Problems in India

The problems affecting the races in India are somewhat different from those of most other countries. The communities separated by distance and by differences of language and culture cannot be welded into a homogeneous body with a common outlook so long as religious and social forces, working in centrifugal direction, remain so powerful and do not permit of a large-scale racial admixture. Our problem is rather to obtain a better balance between the existing elements and pave the way for racial stability and healthy national growth. Speaking broadly, this can be effected in three ways, namely, by giving security and freedom of life to the aboriginal population, by obtaining a better balance between the less and more physically and mentally endowed sections of the people, and by gradually eliminating the hereditarily unfit and the mentally deficient.

The aborigines still conforming to tribal customs numbered 20 millions, in round figures, according to the Census of 1931 and, by reason of their distinctiveness and racial and cultural separation from the rest, need special consideration. With them the question is not balancing, but security against the disintegrating forces of civilization. It is neither possible nor desirable to assimilate them into the general population, for such attempts are likely to break up their tribal life and lead to their gradual disappearance as happened in the United States, Australia and Melanesia. Measures of protection to enable them to evolve their own means of adjustment to changing conditions without interference from outside are therefore necessary for their existence. These have to be devised after giving full weight to their institu-

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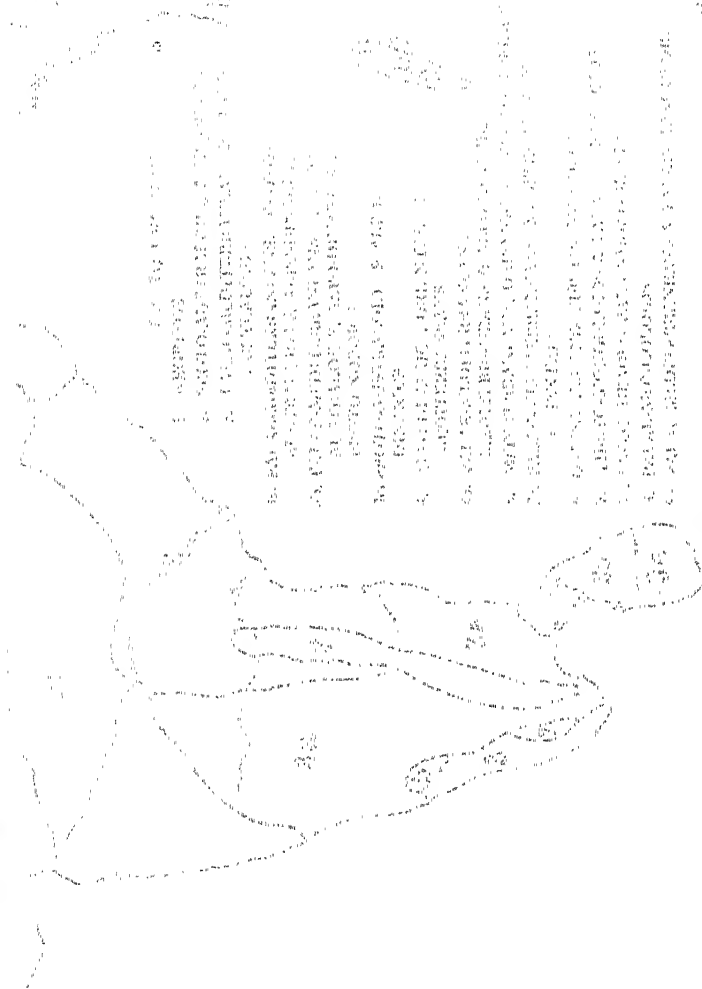
tions and modes of behaviour and keeping in view their position as a distinct unit in the country.

With regard to the rest of the people, from the biological point of view the most important consideration is the strengthening of those hereditary factors without which the efficiency and progress of the race cannot be ensured, even if ameliorative measures like provision of educational facilities and raising the general standard of life are fully provided for. In every country fertility has been found to be greater among that section of the population which is poorer, less physically fit and forward-looking, besides containing a larger amount of primitive strains. The more progressive section, on the other hand, who carry in their blood a greater proportion of the genes responsible for higher physical and mental qualities, have smaller families by reason of their practising what may be termed 'planned parenthood', i.e. fewer well-spaced children who can be properly reared. Unless this disproportion in birth rate between the 'minus' and 'plus' sections of the population (even more than the total birth-rate which is also excessively high) can be greatly reduced, the advancement of the race and its ability to keep pace with the times will be impossible. In the past, caste provided some check by maintaining a genetic barrier against the swamping of superior racial traits, but in its present form as an arbitrary social grouping, it serves no such purpose. Caste selection should therefore be replaced by biological selection, and the too rapid growth of the less physically and mentally fit should be brought under control. In Western countries the establishment of free birth-control clinics has brought to the door of the lower stratum of society knowledge of the methods and practices of contraception from which it has greatly benefited, especially in the health and life of its women. There is no reason why such knowledge should be less welcome to the physically poor, impoverished classes of this country saddled with large families.

In addition to preventing the population from being heavily weighted on one, and unfortunately on the wrong side, there is the problem of the habitual criminals, the

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malformed, deaf-mutes and the mentally deficient, whose defects have a hereditary basis. While provisions for their treatment and after-care are necessary acts in any civilized society, there can be no justification for allowing them to go on multiplying and keeping the genes responsible for these traits in general circulation. They must be prevented from assuming the burden of parenthood, for which they are totally unfit, by sterilization; voluntarily if possible, otherwise by compulsory legislative enactment. There is nothing dreadful about it. Science has now found very simple and humane methods for sterilization by merely cutting and sewing up the *vas deferens*, sperm duct, without desexing or lessening the normal sexual desires of the individual. In California alone, since the sterilization laws came into force in 1907, over 13,000 persons have submitted to the operation, and in most cases voluntarily. A nation cannot subsist solely on sentimental considerations and age-old prejudices. It must profit by what science finds out for human good if it is to move forward. The biological well-being of the Indian people will not come about except by nourishing the hereditary factors which are at the basis of our racial strength and by weeding out those that tend to undermine it.



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Figure 1. Schematic diagram of the experimental setup for the study of the effect of the initial concentration of the monomer on the polymerization of MMA in the presence of the initiator.

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1. The first group of authors (e.g., [1, 2]) considers that the main reason for the appearance of the "fingerprint" is the presence of a large number of small, randomly distributed, defects in the material. These defects are assumed to be of the same size and shape, and their distribution is assumed to be uniform. This leads to the prediction that the "fingerprint" should be a random signal, which is not in agreement with the experimental results.

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Figure 1 illustrates a 2D lattice system with a dislocation. The lattice is represented by a grid of small squares. A dashed line, labeled 'Dislocation', passes through the center of the lattice. The Burgers vector, denoted by 'b', is shown as a vector originating from a point on the dislocation line and pointing to another point. The lattice is divided into two regions by the dislocation line: the top region is labeled 'Top' and the bottom region is labeled 'Bottom'.

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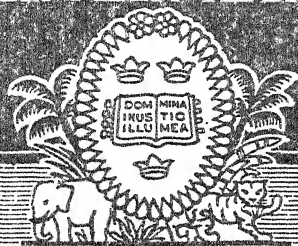
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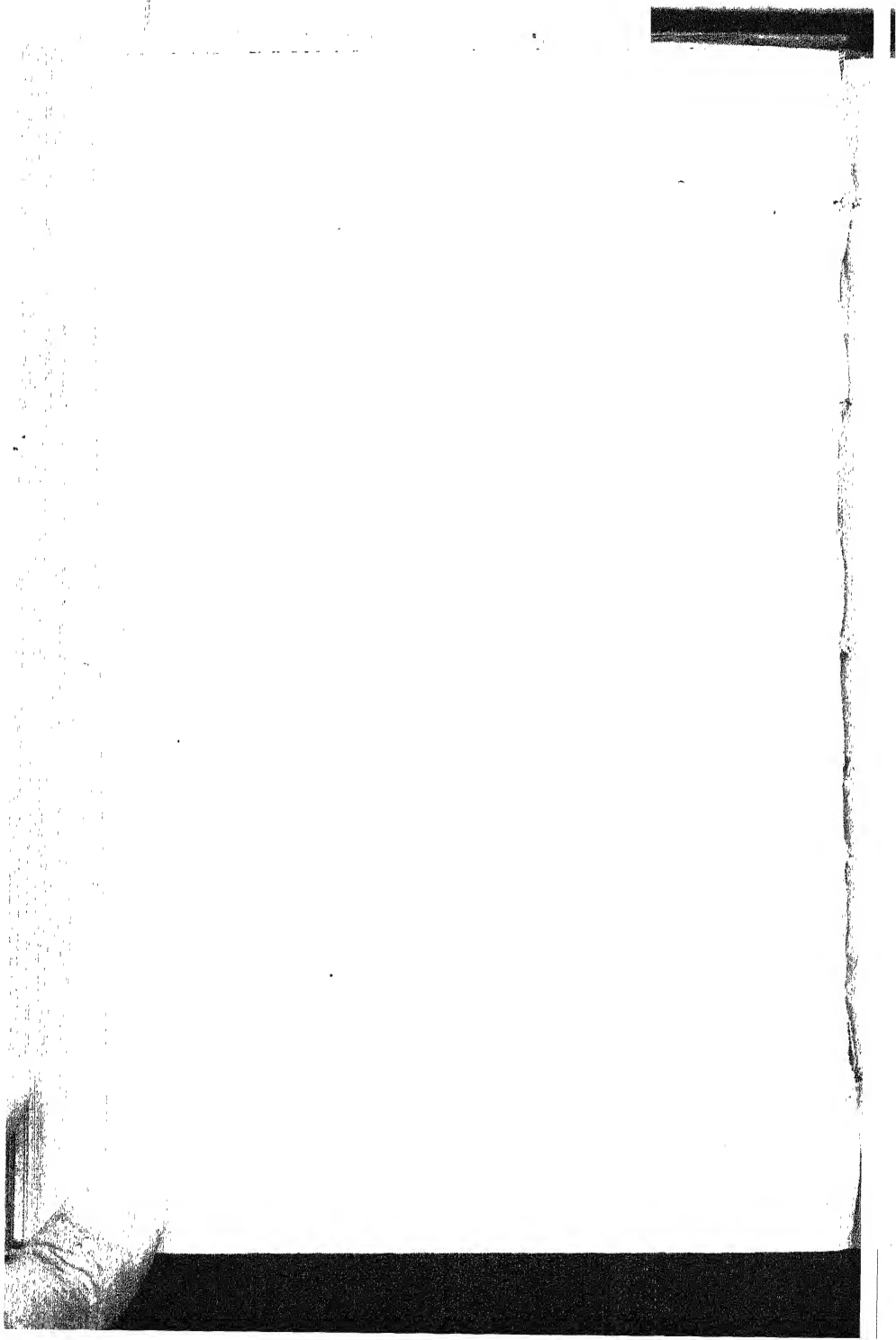
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SOIL EROSION

SIR HAROLD GLOVER

OXFORD PAMPHLETS
ON INDIAN AFFAIRS





OXFORD PAMPHLETS ON INDIAN AFFAIRS

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No. 23

SOIL EROSION

BY

SIR HAROLD GLOVER



HUMPHREY-MILFORD

OXFORD UNIVERSITY PRESS

THE cultivated area of India is 330 million acres, and soil erosion is seriously lowering the productivity of about half this area: it is obvious that the prevention of soil erosion is a task of national importance. Man and his animals are the causes of erosion. When the forests are destroyed in the hills where the rivers rise, rain and flood waters sweep down without hindrance and carry vast quantities of soil uselessly into the sea. Overgrazing in the pastures, and in cultivated land faulty methods and imperfect bunding lead to similar results. Among the indirect effects must be reckoned lower rainfall, shortage of water for irrigation and hydro-electric power, sand deposition and silting—all leading to progressive malnutrition and disease. These evils are not incapable of remedy, and the author suggests how long-range regional planning can restore the natural balance. For success, it will be necessary to control the proper management of forests, pastures and cultivated lands.

Sir Harold Glover, B.A. (Oxon) joined the Indian Forest Service in 1908 and served as a Divisional Officer in the Punjab till 1925. In that year he became a Conservator of Forests, and continued to work in the Punjab and the United Provinces. From 1939 until his retirement in 1944 he was Chief Conservator of Forests, Punjab.

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SOIL EROSION

PART I. SOIL EROSION

For progress—mental, moral and economic—man, with his domestic animals, must live in harmony with his surroundings. His home must be permanent; his land must be stable; the soil of his fields must be cultivated year by year without loss; permanent pasture must be provided for his animals; and from the forests he must draw timber for his dwellings, fuel to cook his food, and the raw materials of industry.

Man has destroyed the forest, has cultivated fields for a short time on steep slopes until rain-water has swept away the soil; has allowed his flocks and herds without restriction to browse and graze on hillsides until the vegetation has been destroyed and the earth and rock have been laid bare. Over many parts of India the balance of nature has been upset and nature has taken a terrible revenge.

Once at least in every monsoon the newspapers are filled with graphic accounts of floods in Madras, in Bengal or in Bihar, in the Punjab or in the United Provinces, and from time to time suggestions are made for combating the flood menace, for building embankments and for costly engineering works to remedy what is considered to be a natural and inevitable evil. But man's memory is short, and as the winter approaches all is forgotten, or, at the most, a few bunds are constructed which for a few years hold back the waters until in an 'exceptional' monsoon (which occurs with distressing frequency) embankments are broken and the floods pour again without restraint over thousands of acres of cultivated fields, rendering many thousands of helpless villagers homeless. Little thought is given to the forests which formerly clothed the catchment areas of the rivers and acted as a great natural sponge, storing the rain-water

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and letting it soak into the soil, only to emerge months later during the autumn and winter in springs, small rivulets and rivers to provide water for the canals which irrigate a thirsty land, or to be drawn up from countless wells.

Where the forests have been destroyed the storm-water, no longer restrained by the protecting cover of vegetation, pours over the bare earth and barren rocks to cause sudden and devastating floods in the rivers. Much damage has been done already and much worse damage will follow unless something is done to restore the forests of the hills.

Up to a short time ago, when the monsoon rains failed, the gaunt spectre of famine stalked through the land. Recently the Bombay Government has been faced with a famine in Bijapur, and has realized that it is not only the shortage of rain which has caused the crops to fail, but also the shallowness of the soil caused by erosion in the cultivated fields, which are no longer able to store sufficient water for the crops.

Soil erosion has been described as a 'creeping death': its effects are not confined to the land, but man suffers as well; and accompanying the decline in arable cultivation is a lowering of human morale. The half-starved peasant becomes listless and apathetic, and he accepts as a necessary evil a permanently lower standard of living. His underfed cattle roam in the wasted pastures, and he derives a precarious living by keeping a few goats which feed on such scattered bushes as still exist. Neither the man himself nor his animals ever have enough to eat, except in the temporary flush of vegetation during the monsoon rains. In many parts of India men and animals are permanently undernourished, and this is directly due to the erosion of the soil which has made it quite impossible for the land to support human life. There are no statistics of the extent of the area which is affected, but at a very low estimate soil erosion is seriously lowering the productivity of 150 million acres.

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Erosion and the resulting decline in the fertility of the soil are one of the greatest problems facing India today, and it is hoped that the simple facts set forth in this pamphlet will serve to stimulate interest in the preservation of the soil.

Top-soil

In the top few inches of the soil are stored the humus, organic matter, chemicals and nutriment which form the food on which a plant feeds. Once this layer of top-soil is lost the fertility of the soil is so reduced that it can no longer support vegetation of any but the lowest type. Years must elapse before nature again builds up a fertile top-soil.

In cultivated fields the plant food in the top-soil is constantly replenished by manure, the loss of which by erosion results in the impoverishment of the soil, undernourished crops and poor harvests.

Types of Erosion

Throughout India on all sloping ground which is not covered by forest or by permanent hay-fields, and where the arable fields are not properly terraced and embanked, erosion of the soil is always going on. In every rain-storm soil is washed away from the surface of the ground: this is called *sheet erosion*. As the water drains away channels are formed which cut deeply into the soil, often forming chasms, or ravines, many feet in depth: this is called *gully erosion*.

Sheet erosion. Sheet erosion removes the valuable top-soil from all sloping cultivated fields, sometimes slowly and insidiously, sometimes during heavy rains rapidly and more obviously; but the result is always the same, namely decreased fertility owing to the loss of the valuable top-soil. India is full of examples of fields which have been cultivated for a few years until erosion has caused the soil to become so shallow and sterile that it can no longer grow good crops.

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Sheet erosion is not by any means confined to ploughed fields, but is present on all sloping pastures wherever they have been overgrazed and the top-soil has been exposed.

Gully erosion. Gully erosion on steeply sloping ground is much more obvious than sheet erosion, particularly in northern India, where vast expanses of deep alluvial soil of exceptional productivity have been converted into valueless ravines, on which a few goats or undersized cows pick up a precarious living. These ravines cut backwards into the arable fields and have already destroyed hundreds of thousands of acres of very fertile cultivation, and are extending daily. In the Siwaliks and the outer Himalayas the ravines are hundreds of feet in depth, and it is by no means uncommon to see abandoned homesteads poised on the edge of a chasm where a farm or a village once existed.

The Function of Vegetation

Where the natural vegetation is still intact, there is no erosion of the soil. As much or more soil is formed by the disintegration of the rocks as is carried away by rain-water.

The forest. In a natural forest the roots of the trees go deep into the soil and penetrate into the cracks and interstices of the rocks which they help to rend apart. There is an undergrowth of bushes and shrubs, grasses and annual herbs which drop their leaves and decay to form a mat of humus which covers the soil. The force of the rain is broken by the leaves of the trees and by this carpet of vegetation, while the surface covering of the soil and the humus soak up the rain-water like a sponge and let it sink into the ground, to emerge later on in springs and streams. When rain falls gently the whole is absorbed; in violent storms, when the rate of precipitation is greater than the rate of absorption, the flow of storm-water over the surface of the soil is impeded by the soil covering, and the violence

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of the floods in the streams is lessened. The roots of the trees, bushes and herbage are intertwined to form a great net which binds the soil together and keeps it in place. The roots help to make the soil absorbent, while the humic acid formed by the decay of vegetation penetrates the rocks and enters into chemical reaction with the minerals, making them available as plant food. Numbers of worms, insects, minute organisms and animalculæ feed on the humus and tunnel in the soil, thus making it suitable as a food for plants. Their function is to form top-soil in which nourishment is stored. The trees, bushes, herbage and grass of the forest support a number of animals, birds and insects which feed on the vegetation or on each other, the whole forming a complex association which has persisted without marked change from time immemorial, and is an asset of incalculable value to mankind.

Pastures. Permanent grass affords less protection to the soil, but has an effect comparable with that of forest in that the actual erosion of the soil is checked. The absorption of rain-water is by no means so perfect as in a natural forest, but the protection afforded by the grass is generally sufficient to hold the soil in place. A properly managed, lightly grazed pasture might form a permanent protection to the soil, but in actual fact there is no such thing as light grazing in India nor has any attempt been made to regulate the incidence of grazing on any other than a small scale, which has had no effect on the general condition of pasture throughout the country.

The alternation of wet with dry seasons when the grass ceases to grow means that in the protracted dry periods which follow the monsoon the cattle never have enough to eat and the grass suffers accordingly.

Fields. All irrigated fields are terraced and embanked and are permanent, and the rice-lands of Bengal and Madras have been cultivated for centuries without apparent loss of

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fertility. Far otherwise is the case over the greater part of peninsular India and in the sloping lands in front of the Himalayas, where the fields are unirrigated and are only roughly terraced, if at all. The climate is such that long periods of drought precede and follow the monsoon rains, with the result that the fields lie fallow for considerable periods after harvest. While the crops are growing, sufficient protection is usually afforded to the soil, but when, as often happens, there are sudden thunderstorms while the fields are bare there is a tremendous loss of soil. It is not possible for the fields to be covered with crops throughout the year as the climate is not suitable, and the loss of soil can only be checked or prevented by contour bunding and terracing, as will be described later.

The Causes of Erosion

Man and his animals, and particularly his pastoral flocks and herds, destroy the vegetation. The bare soil remaining is no longer able to withstand the impact of storm-water, which pours over its surface and erodes it.

The destruction of the forests. In a primitive community forests form an obstacle to progress, and are burnt with the object of clearing the land for cultivation or for pasture. There has been a constant recession of the forest since ancient times. The peace and prosperity which followed the British occupation of India brought about a great increase in population and a great increase in cultivation at the expense of the forests. So great was the destruction throughout India that in 1855 the Government drew up rules and regulations to preserve forests in the hills. When these regulations proved ineffective a special Forest Act was passed in 1878 and the forests which covered the more important catchments of the rivers, or which contained valuable timber trees, were demarcated and preserved. The forests

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so reserved were protected from fire and certain harmful practices were forbidden; particularly shifting cultivation. Provision was made for the exercise of rights of user by the local villagers, and where the rights admitted were reasonable and not too heavy, the forests are in excellent condition today. Unfortunately such forests form only a small proportion of the total area that requires protection.

Grazing rights. In many forests excessive rights to grazing were admitted, not only to resident cultivators but to professional graziers. Their flocks of sheep and goats and herds of buffaloes have done immense harm, particularly in the western Himalayas and the foothills. The animals have increased out of all proportion to the numbers which existed previous to the British occupation, and now are far more than the forests can support. Graziers are permitted to lop trees for fodder provided that the trees are not lopped to death; but in practice the trees are lopped right to the top. Sometimes only a few trees and bushes have survived, and the surface covering of the soil has disappeared, the earth has been washed away, the underlying rock has been exposed, and there is now nothing to impede the flow of water over the surface of the ground.

Shifting cultivation. Formerly shifting cultivation was universally practised, and resulted in the honeycombing of valuable forest with patches of temporary cultivation. It is still common practice outside the reserved forests in some parts of the country, particularly in Assam and the hill tracts of Bengal.

The trees and bushes are cut and burnt, the ground is lightly ploughed and seed is scattered and raked into the soil, which is immensely fertile owing to the wood ashes and accumulated humus. Where the slopes are at all considerable the top-soil is soon washed away by the heavy monsoon rains, and in two or three years the crops are so poor as not

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to repay the labour of cultivation. A fresh patch of forest is chosen and burnt and the first plot is abandoned. This harmful practice, called *jhum* in Assam and *kumri* in Kanara, caused so much devastation that from the sixties of the last century onwards it was stopped in the more valuable timber forests and in most of the forests which covered important catchment areas.

Village forests. Where rights were numerous large tracts of forest were excluded from the reserves and were set aside for the use of the people. A primitive forest community requires and exercises various rights and privileges in the forests, such as rights to timber, fuel, grass, grazing, leaves, fodder and medicinal herbs. Where the population is small the exercise of these rights does little harm to the forest, particularly where they are limited to the agricultural needs of the population and their use is regulated under working plans. Unfortunately the rights have been grossly abused. No provision was made to perpetuate the village forests, and usually they were not placed under the direct or indirect control of the Forest Department, which alone has sufficient experience of forest management. Unrestricted grazing and browsing of local animals, often accompanied by seasonal grazing of nomadic herds of buffaloes and flocks of sheep and goats, have destroyed the greater proportion of these forests. Throughout India the village forest is rapidly vanishing and already there has been a great increase in soil erosion. Some Provincial Governments, as will be described later, have recently made attempts to create properly managed village forests out of the village waste, but these forests form only a very small proportion of the whole country.

Deterioration of the village pastures. India possesses more than one-quarter of the bovine population of the world, 207 million out of a total world population of about 700 million head, and yet India possesses only one-thirtieth of the

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Earth's land surface. In addition to cows and buffaloes there are 118 million other animals of which the majority are sheep and goats.¹ The ordinary village cows, which are kept for their manure rather than for milk, and for religious reasons are sacred to all Hindus, are turned out to graze in the village pastures and on the fields after the crops have been cut. During the long periods of drought and intense heat the grass suffers severely.* The pastures are overgrazed, the better species of grasses are devoured and rooted out by hungry cattle, and no longer do the pastures contain valuable fodder grasses, the place of which has been taken by useless *lambh* grass (*Aristida depressa*), various grasses of low nutrition value, and by unpalatable bushes which alone are able to persist in the face of the very heavy grazing. Most village pastures are pastures only in name, and serve mainly as an exercise ground for cattle, and year by year the soil is eroded away until the land becomes a dreary waste. More and more animals are kept and there is less and less for them to eat. It is small wonder then that the village cows are poor, thriftless beasts with a phenomenally low milk yield.

Lantana, an exotic bush introduced originally as a garden plant, flourishes on degraded pastures where the rainfall is favourable, and is a perfect curse to the grazier because it is poisonous and has replaced the original vegetation.

Faulty methods of cultivation. With the exception of the broad alluvial plains of the Ganges and Indus, the deltas of the rivers and the narrow coastal belt of southern India, the surface of the land is sloping. Sometimes the slope is scarcely perceptible, generally it is moderate, but frequently, especially in the Himalayas and their foothills and in the Nilgiris, the slopes are very steep indeed.

When virgin land is ploughed the naked soil is exposed to the rain. The loss of the fertile top-soil of the fields is

¹ *Atlas of India*, Oxford Pamphlet on Indian Affairs No. 16.

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enormous, particularly on the steeper slopes, and the crops produced grow poorer and poorer in each succeeding year until the land soon becomes unculturable and is left fallow, gradually to be covered with very thin grass or low-grade forest. Erosion is not confined to the fields, as sometimes landslips are started and stone scree are formed on the slopes below. One of the most wasteful methods of cultivation that leads to an abnormal and very rapid loss of soil is that employed in potato cultivation in the Himalayas and the Nilgiris, where the rows run straight up and down hill; elsewhere the fields are ploughed without regard to the prevailing slope, and soil is lost which might have been preserved by ploughing along the contours.

Only the better and more easily manured fields near the villages, particularly the rice fields, are properly terraced and levelled, and represent the results of many years of unremitting toil. To the outlying lands far less attention is paid, particularly where they are not cultivated by the owners but are let on temporary leases to tenants-at-will, who care little for the stability and permanence of the fields.

One of the principal causes of erosion of cultivated lands is this failure to terrace and embank the fields. The result is that the rain, falling on the unprotected soil, pours down the slopes, gathering speed as it proceeds until it sweeps away the soil from the terraced fields below. Huge weirs, broken bunds and ruined fields in the Rawalpindi Division of the Punjab bear witness both to the industry of individual zamindars and to the failure of their neighbours to act in co-operation with them and terrace every field within the catchment area.

In peninsular India, where the rock lies nearer the surface, most of the soil was washed away from the ridges many years ago, soon after the forests disappeared, and the soil of the outlying fields is thin and of low fertility. Contour bunding is being encouraged in order to retain the soil in its proper place.

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Faulty methods of cultivation and the ploughing of unstable slopes have resulted in millions of tons of the most fertile soil of India being carried down the rivers and deposited uselessly in the sea.

Some of the Indirect Effects of Disforestation and Soil Erosion

A lower rainfall. The day temperature within a forest is lower than outside; but when the trees disappear the sun heats up the rocks and bare earth, with the result that the hot air rises and forces up the clouds which no longer drop their moisture in the form of rain, and the country becomes drier than when it was covered with forest.

Game decreases. The Indian forests have always been famous for the number and variety of their game animals, the tiger, buffalo, bison, sambhar, and other kinds of deer. In former years big game was abundant everywhere, but with the thinning out of the forests, and fires, the animals have vanished from the more accessible village forests and have retreated to remote forest reserves where they are specially protected.

Threat to communications. Roads and railways in the hills are blocked each year by landslides, and communications are frequently interrupted. In the plains floods in the rivers often threaten the railways. In 1942 the railway line was breached by floods in the Indus river, Quetta was completely cut off and it took months to repair the railway. In the Ganges basin the main railway line was breached in 1943 by floods, and all trains to Calcutta had to be diverted by a roundabout route. From 1878 onwards the Beas river has threatened to change its course and join the western Beas: if it did so the North Western Railway line would be breached and all communications with the north would be severed. In 1942 and 1943 the threat increased, embankments were broken and new spurs and stone bunds had to be built at

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great expense. The threat to communications is ever greatest in the summer monsoon and is undoubtedly greatly increased by reason of erosion in the hills.

Shortage of irrigation water and hydro-electric power. It has been seen how the disappearance of the forests has been followed by serious monsoon floods. A necessary consequence is the shortage of water in the canals during the cold weather. The Indo-Gangetic plain is irrigated by canals which are fed by the rivers which emerge from the Himalayas. When the snow melts and when the monsoon rains fall these rivers are full and there is abundance of water for the crops; but in the autumn, winter and early spring when the vast plains are covered with wheat there is never enough water to satisfy the farmer, and one reason for this shortage is the disappearance of the large natural reservoirs formed by the forests which formerly clothed the Himalayas. In one big hydro-electric catchment area—the Uhl Valley of the Punjab—the engineers have asked for the complete restoration of the forest in order to conserve and increase the winter supply of water. Some idea of the commercial value of the water can be gathered from the engineers' assessment of Rs. 45,000 as the annual value to them of each additional cubic foot per second of water which flows down the Uhl river during the winter when the demand for electric power is at its greatest and the water in the river is at its lowest. A hundred thousand sheep and goats have been evicted and the owners have been compensated generously.

The lowering of the subsoil water-level. Of late years there has been a very serious fall in the subsoil water-level in front of the Siwaliks in the districts of Hoshiarpur and Jullundur. Punjab irrigation engineers have examined every possible cause and have come to the conclusion that a contributory, if not in fact the main, reason for the lowering of the water-table is disforestation in the Siwaliks.

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Sand deposition. The classic example of sand deposition is the Hoshiarpur district of the Punjab where, directly after the Siwalik Hills had been denuded, torrents of sand poured over and destroyed hundreds of thousands of fertile cultivated fields in the plains. In other districts the denudation of the hills has been followed by similar devastation, and the destruction still goes on. Fortunate indeed are the United Provinces which have preserved and protected the forests of the Dehra Dun and Saharanpur Siwaliks, and consequently have no serious problem of soil conservation in these districts.

Wind erosion. Wind causes the sand of the eroded fields to drift and collect in dunes from which it is constantly blown into the air. These dunes advance and cover neighbouring fields in the dry tracts of Bikaner, Bahawalpur and Hissar. In the Indus valley recent disforestation in the Thal has allowed the wind to blow the top-soil away. The cure is the restoration and protection of the natural vegetation, but that is not easy. Where the climate is favourable the zamindars plant *sarkana* grass (*Saccharum munja*) which fixes the sand. On the sea coast the wind-driven sand is apt to advance inland, but its progress is arrested by the casuarina plantations of Kanara, Malabar, Puri and the Coromandel coast, by groves of coconut palms and cashew trees.

Silting of reservoirs. In central and southern India dams, often of great size, are built across rivers and drainage channels in order to store water for irrigation or for electric power. The catchment areas are often well afforested, with the result that little has been heard of the silting up of the reservoirs. Far different is the case in the United States of America, where already the length of the useful life of reservoirs has been reduced, by silting, to half that which the engineers had calculated. In the Punjab proposals have been made to dam the Himalayan rivers, but the engineers

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are faced with the problem of silt from the denuded soil of the catchment areas.

A lower standard of living. Erosion of the soil is inevitably followed by a lowering in the standard of living. The fields yield less or go out of cultivation entirely, the pastures deteriorate. This scarcity of fodder is one of the main reasons for the low quality of the village cow and for a very low milk yield. From the forests timber, fuel and medicinal herbs, formerly abundant, are no longer available. The men wander far afield in search of work. Malnutrition and disease are alarmingly prevalent in large areas of the Himalayas and their foothills. From the eroded hills of the Punjab thousands enlist in the Army, and if it were not for the pay and pensions which nearly every household receives the only solution to the economic problem which has been produced by soil erosion and overpopulation would be mass migration. Indeed this happened recently in the Middle West of the U.S.A. where fresh homes had to be found for 70,000 people owing to the erosion and desiccation of the soil of their farms.

PART II. SOIL CONSERVATION

The subcontinent of India is so large and conditions are so diverse that it is necessary to consider each of the major subdivisions separately. Only such factors will be described as have a direct and important bearing on soil erosion and conservation. The reader who desires more information is referred to three admirable pamphlets in this series—*Atlas of India* by Dr A. M. Lorenzo (No. 16), *The Food Supply* by Dr Radhakamal Mukerjee (No. 8), and *The Land and its Problems* by Sir T. Vijayaraghavacharya (No. 9).

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The Pressure of the People on the Land

In the territories most affected by soil erosion the pressure of the population on the land is very great indeed; there is sometimes an incidence of 1,000 persons per square mile of cultivation. The average size of the individual cultivated holding is frequently less than one acre. Throughout the hill tracts the food produced is insufficient, or only just sufficient, to support the people, who consequently supplement their resources by keeping flocks of sheep and goats which graze in the waste. It is not to be wondered at that the pastures are overgrazed and have sadly deteriorated.

Peninsular India

Geology. Peninsular India consists of a plateau of crystal-line rocks which are the stubs of ancient mountain ranges, some of which rise above the general level of the country. There is a narrow coastal belt, which is broader on the east than on the west. Geologically the country is an extensive eroded peneplain, which assumed its present shape long before the seismic changes which resulted in the uplift of the Himalayas. The rocks are of immense geological age and most of them are hard and decompose only very slowly, with the result that the soil is thin except in the bottoms of the valleys, or where it has been preserved by forests. The beds of the streams lie on rock, and are not deepened rapidly by water action. The main structure of the land has not changed during historical times, in spite of the fact that there have been marked changes in the vegetation which have led to the loss of surface soil by sheet erosion.

Climate. The climate is sub-tropical, and is a monsoon climate with long periods of drought separated by periods of concentrated rainfall. In north central India the summer temperatures are high and there is a marked difference

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between the seasons, in contrast to South India where there is little variation throughout the year.

On the Western Ghats the annual rainfall varies from 120 inches on the coast to over 300 inches at Castle Rock; in the Nilgiris the rainfall is about 65 to 80 inches, but over the central plateau the rainfall is far less. In some parts the annual rainfall is as low as 10 inches, but usually it is in the neighbourhood of 28 inches, most of the rain falling during the summer monsoon.

The reserved forests. Forests formerly covered the land, and differed in type from the dense evergreen and bamboo forests of the Western Ghats to the thin thorn and scrub forests of central India. The forests of some of the important catchment areas and those in which the preservation of especially valuable timber trees was essential were formed into reserves and are managed by the expert agency of Government or State Forest Departments. In the unfortunately small proportion not encumbered with grazing rights, these forests are a perfect protection from erosion.

The minor forests. In all provinces, and in most States, minor forests were set aside for the use of the people. For the more important of these forests rules were drawn up which regulated the removal of forest produce by the people. Ordinarily the grants of trees for local use are made by the Collector and the Revenue Staff, but there is little effective control. The forests for the most part are honeycombed with cultivation, trees are lopped for fodder, and grazing and browsing are heavy. The minor forests are never in a satisfactory condition and provide only a very poor check on erosion. Those near large centres of population have vanished and often are stony wastes, as at Bezvada, in the lower Eastern Ghats, and in much of the Deccan, whilst everywhere the village forests have sadly deteriorated.

Village forest management. In Madras large areas of minor

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forests were recently removed from Forest Department control and were handed over to the village communities for management under the Collector. The results have been unsatisfactory, except in a few instances where the villagers have united for joint management of the forest estate.

Something in the nature of co-operative forest management by the village forest committee under the expert guidance and control of forest officers is required.

The common village pastures. At one time or another most of the land outside the forests which was capable of bearing crops has been cultivated, with the result that the pastures where the village cattle are grazed together are confined to the slopes where the soil is thin, rocky and dry, with scattered trees, such as *dhak* (*Butea frondosa*), *khair* (*Acacia catechu*), *beri* (*Zizyphus jujuba*) and thorny bushes. Many pastures are filled with lantana and are useless.

During and shortly after the summer monsoon the common pastures are covered with a dense crop of grass and the cattle fatten, but soon the grass is consumed and every blade is eaten. Improvement in the pastures is impossible with the present grazing incidence, and a reduction in the number of animals is essential. Stall feeding and closure of portions of the grazing grounds in rotation must be substituted for promiscuous grazing. Fortunately experience elsewhere has shown that with closure to grazing the better fodder grasses increase and oust the useless grasses. Propaganda and demonstrations are required in order that the villager shall realize this; and the village economy must be so readjusted as to ensure that the pastures are better managed. The farmer needs cattle for manure, for ploughing, for transport, for lifting water from the wells, for threshing and for every kind of agricultural work, as well as milking cows and buffaloes. Already draught animals and those used for ploughing and drawing water from the wells are stall-fed,

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as are the buffaloes and cows kept for milk. Undersized animals, such as are produced when herds roam in the waste, are of little value; fewer, better and stronger animals must be kept, and fodder must be cut and stored for their use.

Arable fields. Wherever the soil is of sufficient depth, particularly where well or canal water is available, the land is cultivated for field crops. These consist of rice, wheat, cotton and sugarcane in the irrigated areas; on the unirrigated fields grow various millets, such as *jowar* and *kodar*, of which the stalks are cut and stored and fed to the cattle. In some places, as in Travancore State, the fields are well terraced. The rice-fields are always perfectly terraced and embanked, and are stable; so are the fields which are irrigated from wells or from the artificial lakes formed by the ponding up of river basins behind artificial dams. Elsewhere the unirrigated fields are generally not terraced; or if so, the terracing is very roughly done and the fields have not been levelled or properly embanked to retain the rain-water; the terracing and bunding are so incomplete that the soil has been rendered shallow by long-continued sheet erosion. In years of plentiful rainfall the *barani* or unirrigated crops are fair to good, but in years of drought the crops fail either partially or wholly and often there is famine in the land.

The Bombay experiment. The recurring famines in Bijapur and the Deccan have caused much concern to the Bombay Government, which has devoted a sum of three-quarters of a crore of rupees to their restoration. Small and inexpensive bunds are built in the fields along the contours, with the object of arresting the removal of the soil by sheet erosion, and of retaining the rain-water on the field on which it falls. Stone dams or weirs are built across the nullahs. It is hoped that the water-level in the wells will rise and that more water will be available for the crops.

Not only is there a shortage of grain and fodder but also

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of firewood, as in most villages the forest disappeared completely many years ago, and its place has been taken by a stony waste capable of supporting only a very few goats or scrub cattle.

Along the contours of the barren slopes long trenches are dug to trap the rain-water, on the berms of which seeds of useful trees are sown. Closure to grazing has already resulted in the growth of good grasses and the improvement in the indigenous vegetation will serve to stabilize the soil.

Estates in the Nilgiris. Tea and coffee planters in the Nilgiris have long realized the loss of soil by erosion, and have levelled and terraced their gardens as far as they are able. They have also grown cover crops to protect the soil. In the Madras Government pyrethrum plantations strips of natural vegetation have been left along contours at intervals of 24 feet in order to prevent the soil from being eroded. It is hoped that villagers will copy the Government's example, as much soil is being lost from untterraced fields on steep slopes.

The Plains of the Ganges and the Indus River Basins

Between peninsular India and the Himalayas lie the basins of the Ganges and the Indus rivers and their tributaries which run through vast cultivated plains. The irrigated lands of the Ganges support one of the densest populations in the world: the climate is warm and moist and rice has been cultivated since the dawn of history. The plains of the Gangetic basin are liable to floods which derive their origin in the Himalayas. The violence of the Damodar floods is due to recent disforestation in the Chota Nagpur hills, and the cure is re-afforestation.

The Indus drains a dry level tract of low rainfall, which in the south-west is less than five inches per annum, and cultivation without irrigation is impossible. During the last

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80 or 90 years canals have been constructed which bring to the wheat-fields of the Punjab and Sind water from the rivers which rise in or beyond the Himalayas.

The headworks of the canals have frequently been damaged by floods. The beds of the rivers are known to be rising in consequence of erosion in the Himalayas and this is bound to affect the behaviour of the rivers: recently the Indus river threatened to change its course, which might have left the Sukkur barrage high and dry. Vast amounts of silt are carried in suspension in canal water, are deposited in the water channels and have to be got rid of, and the costs of construction of the canals are greatly increased by reason of the torrents which emerge from the hills and threaten the safety of the canals. Sixty torrents crossed the line of the Upper Jhelum canal, the greatest of which had a discharge when in spate of 15 times the authorized capacity of the canal. The cost of carrying those torrents across, or leading them by means of syphons beneath, the canal was Rs. 1,45,00,000, or over a million pounds sterling. Two torrents were taken over the Sirhind canal by means of great troughs, or superpassages, the largest of which is 132 yards in width and 12 feet in depth, and yet floods occasionally overtop the sides of the troughs. The violence of the floods was greatly increased by reason of disforestation in the hills, which now are being closed to grazing and afforested, and it is expected that there will be fewer and smaller floods in future.

The United Provinces soil conservation experiments. In the lower Jumna river basin are extensive ravines which the United Provinces Government attempted to afforest over twenty-five years ago. The slopes were trenched and sown with *kikur* (*Acacia arabica*), which for a few years flourished; but because of the infertile soil failed to produce timber trees of much value. But closure to grazing, which was incidental to the attempts at afforestation, resulted in a

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dense growth of grass, amongst which grew bushes and thorny shrubs, while gradually tree species of the old indigenous forest appeared. This vegetation held the soil together and made it stable, and foresters realized that where trees could not be grown grass could be relied on as a very efficient substitute in the prevention of erosion, and was preferable to expensive trenches, dams and revetments.

The cultivated uplands of the Punjab and trans-Indus. In the Indus basin are vast stretches of cultivated, gently sloping uplands of alluvial soil which are drained by the Indus and Jhelum rivers and their tributaries which lie much below the general level of the country. The edges of these plateaux are fretted with ravines which extend far back into the cultivated fields. Wherever the fields have not been levelled, terraced and embanked, the valuable top-soil is washed away and after a few heavy storms the fields become full of gullies and are not worth cultivating. The rainfall is low and ill distributed, as two-thirds falls in the summer monsoon. In the winter there is just sufficient rain for wheat to grow if all of it is conserved and made to remain on the field in which it falls. This is done by levelling and terracing each field and surrounding it with a peripheral ridge, or bund, which ponds up the rain-water and constrains it to sink into the soil.

The fields are ploughed after every shower of rain, as often as twelve to fifteen times in the year, in order to conserve the moisture in the soil. Occasional thunderstorms in April and May do much more harm than good, and where the land is not level and where the fields have not been embanked the water pours over the surface of the soil in a flood which destroys the terraced fields below. The remedy is the complete terracing and embanking of the whole catchment area, and the provision of drains and weirs for the escape of surplus storm-water. Where the cultivators

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are small-holders they are organized into co-operative land reclamation societies to which the Government makes grants of money for weirs and dams which the villagers cannot afford. Drainage of excess storm-water is most important, as if there are no regular escapes for storm-water the bunds are broken and fields are destroyed, as has happened time and again in the past. The land requires capital which is provided by *taccavi* loans and Government grants to approved co-operative land reclamation societies.

West of the Indus the rainfall decreases to less than ten inches a year and cultivation is impossible unless every drop of water is utilized. In the broad valleys within the hills substantial stone walls are erected, and when floods occur in the nullahs the silt-laden waters are ponded up behind these walls, silt is deposited and in a few years fields of great fertility are formed which are irrigated whenever there is water in the nullahs, which are dry for the greater part of the year.

The rain-water which falls on the hillsides is led along channels to level terraced fields which are embanked in order to retain the rain-water which alone makes cultivation possible. Frequently attempts are made to form fresh fields by ponding up storm-water by means of stone or earthen dams which completely block the valleys, and behind which silt is deposited to form fields of great fertility. Some of these dams are of considerable size and strength and are furnished with proper escapes for regulating the height of the flood water and large permanent fields are formed. More often the dams are of insufficient strength to withstand the force of heavy floods, and are broken after a few years' use.

The conservation of rain- and storm-water for cultivation is well understood, but the provision of adequate drainage for storm-water is usually neglected, and Government help and advice are required.

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The Himalayas and their Foothills

To the north of the Gangetic plain lies the immense mountain chain of the Himalayas, rising steeply from the plains, range behind range, to form a complete barrier between India and Tibet. The rocks consist largely of granite, gneiss and schists, shales, quartzites and strata which often have been so metamorphosed as to have lost all trace of their sedimentary origin. Parallel to and to the south of the Himalayas is the Siwalik Range which consists of boulders, gravels, sands and clays eroded from the rocks of the Himalayas during the course of earth movements which resulted in their uplift. The Himalayas and the Siwaliks are of comparatively recent geological origin and the Himalayas are still subject to pressure and strain as is shown by the earthquakes which occur with great violence and comparative frequency.

The summer temperatures of the lower hills are high and the lower valleys are intensely hot; but as elevation increases the climate becomes cool and very pleasant. The rainfall increases with elevation and is much greater in the east than in the west. The south-west monsoon rains are heavy on the outer ranges and towards the east; but the clouds drop most of their moisture before they pass over the higher ranges, with the result that the innermost hills are dry and barren. Very arid conditions prevail in the extreme west.

The Indus, the Sutlej and the Brahmaputra rise beyond the main axis of the Himalayas in Tibet; otherwise the catchment areas of the great rivers lie entirely on the southern slopes of the Himalayas.

The eastern Himalayas and the foothills. The eastern Himalayas and their foothills are well afforested; but erosion caused by disforestation and shifting cultivation after burning patches of the forest is severe in northern Bengal and Assam, where the rainfall is very heavy (70 to 200 inches).

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Shifting cultivation has been practised for centuries, and where the intervals are long the forest regrowth masks the effect of soil erosion. But with the increase of population these intervals become shorter and shorter and the main rivers in the plains are often in violent flood.

Of the country further to the west in the United Provinces Smythies has written: 'The Gangetic watershed, in fact, has all the physical conditions present that must unleash the powers of destruction, denudation and desiccation against which man is helpless, if the only real defence, i.e. natural vegetation, is once destroyed.' He has since refuted the suggestion that the floods of the Kosi and Gagra rivers are due to deforestation in Nepal. The forests of the Siwaliks of the United Provinces afford a perfect protection from erosion as a wise forest policy has preserved them.

The western Himalayas. West of the Jumna very different conditions are found. The climate is favourable to man and his animals, particularly sheep and goats, of which there has been a vast increase. The long periods of drought make it impossible for vegetation to withstand the effect of the exceedingly heavy grazing.

The importance of the forests on the lower hills was not realized by the earliest British administrators, and the forests were included in the village estate. The villagers lopped and felled the trees for fodder and firewood, grazed their herds and flocks in the forests, and permitted hordes of foreign sheep and goats to destroy what was left. The hills became completely barren, and torrents have destroyed hundreds of thousands of fertile arable fields in the plains.

The rocky hills in the extreme north-west have been denuded of tree growth and are desolate wastes. The sloping uplands in front of the hills have been cultivated, and have been cut into by ravines which year by year destroy more and more cultivated land.

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In the Himalayas considerable areas of forest were demarcated sixty years ago, and parts of the catchment areas of the rivers are well protected. But such extensive rights to grazing were admitted that some of the protected forests are forests only in name and have disappeared or are disappearing. The forests set aside for the use of the people have deteriorated to such an extent that they no longer serve the needs of the people.

The Hoshiarpur Siwaliks. Directly after the British occupation of the country in the middle of the last century the forests of the Siwalik Hills were included in the village common land and were felled, overgrazed and destroyed.

The Siwalik Hills consist of boulder beds, soft sandstones, clays and sands which are very unstable once the protection afforded by vegetation has been removed. From these bare and barren hills, sand has been carried by torrents into the Hoshiarpur District and has buried or destroyed thousands and thousands of its intensively cultivated fields. Erosion reached its peak in 1895, when the damage was so serious as to call for special action by the Government, which enacted the special *Chos* Prevention Act (1900), and evicted all sheep and goats from the forests and regulated the grazing of cattle.

The administration of this Act was entrusted to the Collector and the Revenue staff, occasionally assisted by a Forest Officer, and although a good deal of improvement took place the sand was still carried in streams to the plains. Later on the Forest Department became responsible for soil conservation.

It was soon realized that closure to grazing by sheep and goats was not sufficient and that the cattle must be kept out also before the forest could properly protect the soil. Some villagers agreed to this closure and substituted stall-feeding for grazing, and co-operative village forest societies were

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formed for the management of the forests under the guidance of the Forest Officer. Far more grass grew than the landlords and their agricultural tenants could use, and as a ready market was found in the plains much revenue was made from the sale of grass.

The Bachoi village in 1943 made Rs. 6,200 as against Rs. 200 in 1934 when the forests were open to grazing. The *bhabar* grass (*Eulaliopsis binata*) flourishes when protected from grazing, and has been bought in large quantities by the paper mills which are in urgent need of raw materials owing to the stoppage of imports during the war. Envyng the newly found prosperity of the Bachoi village more and more villagers are bringing their forests under proper management.

Already the violence of the sand torrents has partially abated, and land is being reclaimed from the torrent beds, either as forest to meet the acute demand for firewood, or as agricultural land.

Torrent training. The methods by which the torrents are trained and land is reclaimed from their beds are of interest.

The current is deflected by stake and brushwood spurs behind which the water deposits part of its load of silt. The spurs are strengthened by the planting of green branches of *jhingan* (*Lankea grandis*), *banha* (*Vitex negundo*), *shisham* (*Dalbergia sissoo*), *Ipomea carnea*, and *nara* grass (*Arundo donax*) which take root and form living hedges. *Sarkana* (*Saccharum munja*) grass is planted behind the spurs, and this causes a further deposit of silt: the *kahi* grass (*Saccharum spontaneum*) appears naturally and helps to accelerate the formation of a new and permanent bank. In the second year *shisham* stumps are planted and these take root and form a forest plantation. The grass is harvested and either is used by the owners or is sold at a profit. Sometimes arable fields are reclaimed from the torrent beds by diverting the stream into ponds, which are bounded by strong

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earthen dams, in which silt settles; but this practice is not generally encouraged as forest is equally valuable and has the advantage of confining the torrent within a narrow permanent channel.

The Kangra village forest experiment. The Kangra district of the Punjab lies on the outer edge of the Himalayas in front of the huge rampart of the Dhauladhar range of mountains, of which the peaks tower to heights of over 17,000 feet. The main valley lies at the foot of this range and consists of small hills and valleys in which patches of cultivation, often of considerable extent, are scattered through the forests and pastures. A comparatively small proportion of the forest was demarcated as forest reserve owned directly by the Government, very extensive rights were given in the demarcated protected forests, while the far greater proportion of the forest was not demarcated and was subject to hardly any control. The forests are disappearing, with the result that erosion of the soil is serious.

To add to the complications and difficulties of management the soil on which the forests stood was declared to be the property of the people. By 1938 relations had become so strained, and erosion was so serious, that the Punjab Government, on the advice of a Forest Commission which had been appointed to hear the grievances of the people, determined to try a new policy. The Government decided to form village forest estates from the reserves, the protected forests and the village waste, and to surrender the revenue therefrom, provided that the people agreed to manage the forests according to working plans which arrange for the prevention of soil erosion, that the appointment of the village Forest Officer should be subject to the approval of the Government, that the village forest should be inspected at intervals by the Government Forest Officer and his advice acted upon.

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At first the villagers were suspicious, and, to begin with, progress in forming village forests was slow; but already, as a result of continued propaganda by the Co-operative, Forest and Civil Departments, village co-operative forest societies have been formed for the management of 66,000 acres of village forests. Protection has greatly improved, and the villagers now take a pride in their forests instead of regarding them as a nuisance, and this great experiment in the democratization of forest management promises to be most successful. Progress is hampered by the chronic shortage of trained forest staff which cannot deal with the numerous applications that are received.

Action taken by Provincial Governments

The United Provinces has an Afforestation Division which was constituted many years ago, and after the war soil conservation will be taken up in earnest. In other provinces the harmful effects of erosion have lately caused much concern. The Bombay Government has formed a special soil conservation branch of the Agricultural Department; the North-West Frontier Government has, during the last year, sent a special party of forest officers to study Punjab soil conservation methods, the Baluchistan Government has arranged for a Forest Officer to study and report on soil erosion. The Kashmir and the Chamba States have recently begun to pay attention to soil conservation.

The Punjab. In 1939 the Punjab Government created a Soil Conservation Circle in the Punjab Forest Department which operates in the more heavily eroded tracts in and in front of the Himalayas.

The policy is to restore natural conditions, which permit vegetation to protect the land and hold the soil in place; to improve faulty methods of cultivation; to conserve water for the crops and to drain away surplus storm-water.

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Masonry works are confined to field outlets and to weirs along the main lines of drainage of the fields.

The Government could not possibly afford to finance the high cost of terracing the fields and reclaiming the land, and although it can contribute towards the cost the labour must be provided mostly by the people themselves.

The first essential for the successful carrying out of a progressive soil conservation policy is that it shall be appreciated by the majority of the people.

Constant propaganda is required, as it is only when the general body of the people are convinced of the seriousness of the menace of soil erosion that anything effective is done. The officers of the circle are in the closest contact with the villagers, are experts in propaganda and are able to explain to the people the need for conserving the forests, for regulating the grazing and for improving the methods of cultivation. Articles are published in the press in English and in local languages; numbers of photographs of eroded lands are displayed; special tours are made in the villages, when lectures are given which are followed by endless informal talks; demonstration models of soil erosion are made; posters are prepared; short lessons are given in the village schools; and soil erosion forms an essential part of the Rural Uplift programme. Interest is awakened amongst all classes in the province.

The conservation of the soil is the concern of all who are responsible for the welfare of the District, particularly the Collector and his staff. The soil conservation officers keep in touch with the Revenue, Agricultural, Veterinary and Co-operative Department officers of the District, and with all who are concerned with the use of the land and the development of the resources of the countryside. The Co-operative Department, with its wide experience of rural conditions and business organization, has proved to be of the greatest value in founding and controlling village forest and

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soil conservation societies. Lately the Panchayat Department has been of help.

It is desirable to prepare regional plans for each considerable catchment area, in which the estate is treated as one composite whole, and the proper management of the forests, the pastures and the cultivated lands is suggested or prescribed. These suggestions form the basis of long-term planning, as the reconditioning of the land is a long process, particularly when, as at present, the men are serving in the army in every theatre of war.

Summary

The causes of soil erosion are the destruction of the forests and of the vegetative covering of the soil, which is due to an excessive increase in the numbers of domestic animals and pastoral flocks and herds, and to improper cultivation without due consideration to the stability of the soil.

The cure of soil erosion is the restoration of the vegetation so as to protect the soil from the erosive action of water and wind, and this is secured by the afforestation of the upper catchment areas of the rivers and the proper and sustained management of both the reserves and the village forests; by the limitation of flocks and herds to the numbers of animals which the vegetation can support; by the substitution of stall feeding and proper pasture management for promiscuous grazing; by better agricultural practices, which by terracing, levelling and contour bunding prevent the loss of the top-soil by sheet erosion and conserve the rain-water; by the drainage of surplus water.

When the natural balance which man has disturbed has been restored, then and then only will the soil be rendered stable, and man and his animals will live in harmony with their surroundings.

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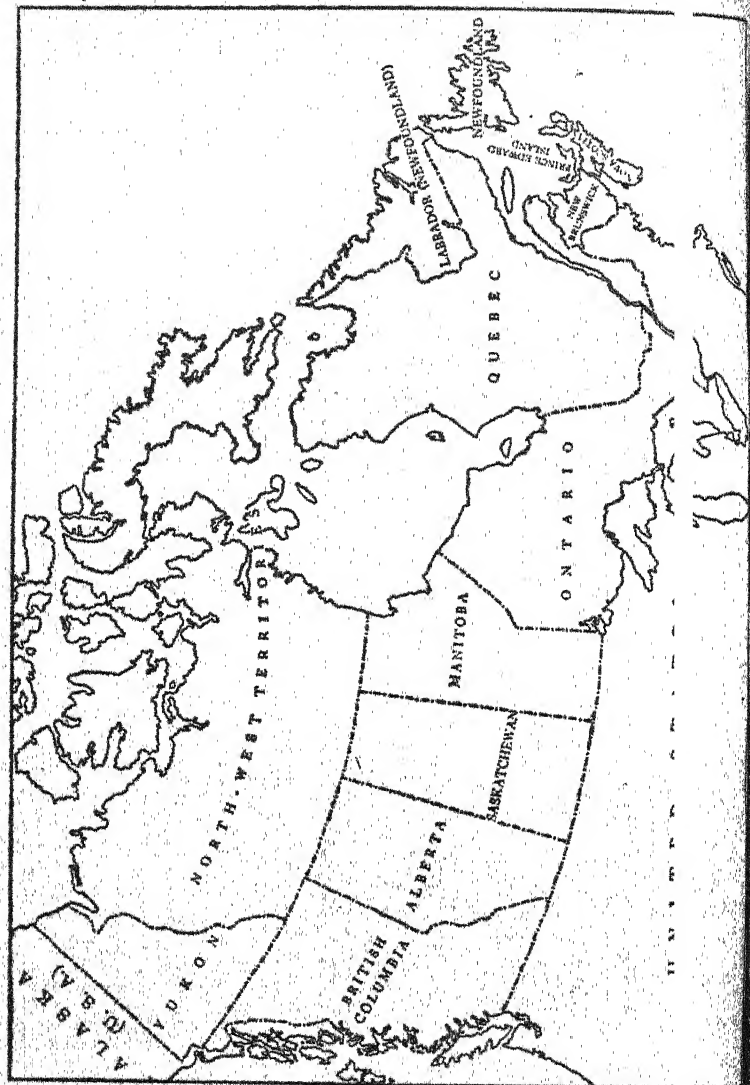
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THE MEANING OF DOMINION STATUS

S. M. BOSE

OXFORD PAMPHLETS
ON INDIAN AFFAIRS





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No. 24

THE MEANING OF DOMINION STATUS

BY

S. M. BOSE

*E. D. College & Museum
New Delhi*



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THE British Commonwealth of Nations is made up of the United Kingdom and the five Dominions of Canada, Australia, New Zealand, South Africa and the Irish Free State. These countries were former colonies of Great Britain, and within the British Empire there are still many colonies and dependencies which do not enjoy Dominion Status. This pamphlet traces the transition from colony to Dominion in Canada and elsewhere, examines the meaning and implications of Dominion Status, and shows that British India has reached a position so nearly equal to that of the Dominions that the transition to Dominion Status may be attained within the framework of the Government of India Act of 1935 and by amendment of the Statute of Westminster. No national security can be found in isolation, or even in national groups, however, and the author maintains that some sort of an international society is essential to solve the problems that will face the world after this war.

Sudhansu Mohan Bose, M.A., LL.B. (Cantab.), Barrister-at-Law and Advocate of the High Court, Calcutta, was a member of the Bengal Legislative Council during the periods 1920-3 and 1929-36 and a member of the Bengal Public Service Commission from 1937 to 1943. He is the author of two books entitled *The Working Constitution of India* (1921 and 1939) which examine in detail the Government of India Acts of 1919 and 1935.

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THE MEANING OF DOMINION STATUS

WHAT does Dominion Status mean?' asked Mr Lloyd George in the House of Commons in December 1931, speaking on the motion for approval of the Article of Agreement or a Treaty between Great Britain and Ireland.

Dominions were originally colonies inhabited mainly by people of British origin with British habits and political traditions. They form part of the British Empire. This British Empire is a congeries of nations, not merely a State but a system of states. It includes states and peoples in all stages of development, from the self-governing Dominions like Canada and Australia to the Protectorates of the Gambia, Sierra Leone and Nigeria. The scope of his pamphlet is confined to the 'self-governing Dominions', or, more shortly, 'Dominions' and other colonies and India which aspire to become Dominions. So these questions require examination: How did certain colonies become Dominions? What are their position and powers within the British Empire and outside? What are the characteristics of these Dominions? What are the prospects of other colonies climbing up the ladder to the position of Dominions? What are the position and prospects of India? And what are the implications of Dominion Status?

The expression Dominions is defined in Section 1 of the Statute of Westminster, 1931, as meaning Canada, Australia, New Zealand, South Africa, the Irish Free State and Newfoundland. But this definition does not lay down any criteria to determine the status of a Dominion; and the mere fact of a community being included in the above definition as a Dominion does not necessarily mean that that community possesses Dominion Status; and on the other hand, the mere fact that a country is not enumerated in Section 1 does not show that it is not a Dominion.

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Colonies

The use of the word Dominions is somewhat recent, having been adopted in the Colonial Conference held in London in 1907. The hitherto prevalent term was Colonies. How this term was modified and finally replaced (as regards certain self-governing colonies) by the term Dominions forms an interesting study and is an example of how far-reaching changes in constitutional structure have occurred with very little assistance of Statutes—by the growth of conventions and usages, a mode suited to the peculiar genius of British mentality.

Under the old colonial system, a colony was regarded as a mere estate out of which the mother-country, England, could make a pecuniary profit, but this idea fell into decay after the War of American Independence. The mother-country ceased to play the part of stepmother, making unjust claims and imposing annoying restrictions on the colonies, but the idea persisted that colonies were meant for profit. When, after the War of American Independence, this idea was abandoned, it was replaced by a notion in the minds of most Englishmen that colonies were a nuisance. The saying of Turgot was quoted with approval: 'Colonies are like fruits which cling to a tree only till they ripen.' Colonies were felt to be a burden on the mother-country. 'We derive no benefit from them but very often incur liabilities on their account.'

The colonial system, as Seeley remarked, was an irrational jumble of two opposite conceptions. It claimed to rule the inhabitants of the colonies because they were Englishmen and brothers, yet it ruled them as if they were conquered Indians. And again, while it treated them as conquered people, it gave them so much liberty that they could easily rebel.

The growth of colonial independence is well exempli-

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fied by Canada. A brief examination of the steps by which Canada attained the status of a Dominion is of special interest to India, where the constitution is said to be based on the Canadian model.

Canada

The Canadian Constitution is tinged with original racial and religious antagonism between Upper and Lower Canada (now Ontario and Quebec).

Lower Canada (Quebec) was largely peopled by descendants of the early seventeenth-century immigrants from France to Canada. These French-Canadians formed a distinct race of their own, speaking the French language and governed by old French law, the *Coutume de Paris*. These people were very jealous of their position and steadily refused to be absorbed in the English element in Upper Canada; they now form more than a third of the population of Canada. After the cession of Quebec by France to England, the two Canadas were separate. The alarm caused by the disloyalty of the New England colonies resulted in the adoption in Canada by the Imperial Government of a policy intended to prevent rebellion by complete control of the administration on behalf of the Crown. In 1774, control was vested in a Governor with a nominated Council, in breach of the promise of a replica of British institutions in Canada. In 1791, the Crown had to concede representative Government, but real power was kept in the hands of the Executive uncontrolled by the Legislature. The Governor had funds at his disposal largely from Imperial grants and had troops under him. The Executive Council was manned by his own nominees. The resulting inevitable conflict between the irresponsible Executive and the democratic Legislature imbued with British political ideas led (in 1837-8) to abortive revolts in both Canadas. Lord Durham, who was sent out to Canada as

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Governor-General and High Commissioner, realized the impossibility of conducting the government of this free community on the old system of *representative* government, and he suggested the solution of applying the principle of ministerial responsibility to all matters not of Imperial concern; the adoption of his ideas led to the introduction of *responsible* government.

Representative and Responsible Government

Representative Government means the system under which all the administrative functions of government are in the hands of a Governor appointed, and removable, by the Crown. He is to act with, but not according to, the advice of an Executive Council appointed by himself and is empowered to refuse assent to bills passed by the Legislature, and to summon, prorogue and dissolve it. So the Legislature has no effective control over the Executive.

Responsible Government means a system of ministerial responsibility, by which the Governor's Executive Council is composed of persons who command a majority in the elected legislature—the Lower House where there are two Houses. The Governor is required to carry out the administrative and the legislative functions upon the advice of those persons in accordance with the wishes of the elected Legislature. Those persons are Ministers, who are responsible to the Legislature for their action and who may be changed by the Legislature.

This change from Representative Government to Responsible Government was effected, not by Statute, but by a dispatch from the Secretary of State to the Governor instructing him to act on the principle of ministerial responsibility. It was established and operated by usage and convention.

On Lord Durham's advice, the two Canadas were united in 1840, and by 1847 the new principle of Responsible

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Government was introduced in Canada, and soon after, in New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland.

In Canada, there was acute racial and religious conflict among the people (the French and the English halves) and also acute conflict of economic interest between the maritime provinces of Newfoundland, Nova Scotia, New Brunswick and Prince Edward Island on the one hand and the two Canadas on the other. Federation was recognized as the sole mode of solving the deadlock. By an Imperial Act passed in 1867, known as the British North America Act, there was formed a federation known as the Dominion of Canada, the two Canadas (now separated as Ontario and Quebec) being united with Nova Scotia and New Brunswick. Other provinces were included in the Dominion, so that now the Dominion of Canada is made up of nine provinces.

The Constitution had to take note of the divergent interests noted above, and so it had to be federal. There are ten Parliaments in the Dominion and a rigid delimitation of functions between the Dominion Parliament and the provincial legislatures. As compared with the federation in the United States of America, that of Canada differed in important respects. In the United States of America specific legislative powers were transferred to the Congress or the Federal Legislature, and the residue remained in the States; while in Canada, specific powers were vested in the provincial legislatures and the residue vested in the Dominion Parliament. In the United States of America, neither the Congress nor the President has any control over the States in the exercise of the powers left to them by the Constitution; but in Canada, the Governor-General in Council has power to disallow provincial legislation even within the limits of provincial powers. The rights of Catholic Quebec were respected in the Constitution (i.e. in the Lower House of the Dominion Parliament, there is

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redistribution of seats after each decennial census, but Quebec is always to have 65 seats); in the Senate Ontario and Quebec have each 24 members.

The revelation of the weakness of the Central Government by the events leading up to the American Civil War of 1861-5 had impressed the framers of the Constitution with the necessity of a strong Central power. Hence the provision that the Dominion is to have exclusive power over matters not expressly assigned to the provinces and has the sole right to legislate regarding, *inter alia*, defence matters, postal service, currency, banking, patents, copyright, criminal law and procedure. Regarding amendment of their own Constitution, the provinces had this power except as regards the office of the Lieutenant-Governor.

The Constitution Act of 1876 can only be changed fundamentally by an Act of the Imperial Parliament, a fact due to the recognition of the Act as a legislative affirmation of a pact between the provinces, which should only be altered by practically unanimous provincial consent. It is to be noted that under the Act, English or French may be used in debates in the Canadian Parliament and the Legislature in Quebec; and records of these Houses are to be kept in both languages. Further, either language may be used before any Dominion Court or Court of Quebec; and the Acts of the Parliament of Canada and of Quebec are printed in both languages.

The natural desire of the Dominion to obtain greater constituent powers is thwarted by an absence of agreement on the subject among the provinces, Quebec fearing that any change might impair security for the equal treatment of the French language in the federal Parliament and the position of the Catholic Church.

It thus appears that the Canadian Constitution aims at providing effective protection for an important minority separated by religion and language from the rest.

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Australia

The white population of the colonies of New South Wales, Victoria, South Australia, Queensland, West Australia, Tasmania and New Zealand were racially homogeneous and were the descendants of British settlers. The fear of these colonies of the growing political and economic power in the Pacific of Germany and Japan made them think of a United Australia. In 1891, there met an Australian Convention which drew up a draft Bill but this came to nothing. In 1895, a successful attempt at union was made, and as a result of a Bill approved by the colonies at referendum, the Commonwealth of Australia Constitution Act, 1900, was passed by the United Kingdom Parliament. The Commonwealth so constituted included all the colonies of the Australian continent and also Tasmania. The constitution is that of a federal State embracing six existing States and was on the lines of the U.S.A. Constitution. Unlike Canada, (1) the Commonwealth was given specific powers and, subject to these powers, the powers of the States remained unaltered; (2) the Commonwealth had no control over the States and had no power to interfere with State legislation in the sphere assigned to the State by the Constitution; and (3) while the alteration of the Constitution in Canada is a matter for the United Kingdom Parliament, in Australia it is a matter for the Parliament and the people of the Commonwealth. The Constitution can be altered by the Houses of Parliament and the electorates in the special manner provided in Section 128 of the Act.

South Africa

The four colonies of South Africa—Cape Colony, Natal, Transvaal and Orange River Colony—formed the Union of South Africa. South Africa had a racial problem: English majorities in Cape Colony and Natal; and Boer majorities

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in Transvaal and the Orange River Colony. There was another racial and colour problem--the problem of the relationship between the black and the white races. After the Boer War the colonies agreed to a union and a convention met in 1908 and drafted a Constitution. The majority favoured a union under a single Parliament and Government. After certain amendments approved by the four colonies, the United Kingdom Parliament passed the amended draft as the South Africa Act, 1909. South Africa is a unitary Dominion and not a federation. The Union Parliament is supreme and there is no division of power. The Union Parliament has power to amend the Constitution in the special manner and in the matters provided in Section 152.

Here an essential similarity between the national histories of South Africa and Canada may be noted. In both, two separate national cultures have been brought within the same political framework by the crude method of conquest. But the victors in both countries have been forced to give powers to the vanquished which obliterated the normal effect of conquest. The history of both Canada and South Africa was the history of reciprocal adjustment of cultures; struggle enforced a recognition of diversity; and thereby, the French Canadians won from the British respect and liberty for their individual ways of life. The common way of life for both parties was no doubt British, in origin (as was also the case with the Africaners); but this origin was transcended, as Hancock puts it, by the acceptance of separateness in cultural loyalties. The aim of the French Canadians was to preserve their rights and privileges which the Constitution Act had secured to them firmly. They were thus opposed to any relaxation on the limitations to amendment of the Act. But cultural difference in Quebec was based on distinction of religion, and this was not the case in South Africa. The French Canadians have

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deliberately segregated themselves from the rest of the people, unlike the Africaners.

Imperial Conferences

The position of the self-governing colonies was anomalous. In theory, they were still subordinate to the United Kingdom, though in practice they had attained a considerable measure of independence and self-government. Gradually these colonies began to press for being accorded recognition in the United Kingdom. In 1879, Canada suggested that the British Government should receive an official representative of Canada who would be specially entrusted with the general supervision of all the political, material and financial interests of Canada in England and who would also be specially accredited by the Sovereign to negotiate any trade treaty which Canada desired to conclude with a foreign Government; and that he should be designated as Resident Minister and given a quasi-diplomatic position at the Court of St James. But this was objected to by Her Majesty's Government, and ultimately the title of High Commissioner was given to the Canadian representative in London. This precedent was followed later on in the case of other Dominions.

The indefinite relation existing between the United Kingdom and the colonies was sought to be settled by mutual discussion at what came to be called the Imperial Conferences. At the time of the Queen's Jubilee in 1887, the British Government convened in London a spectacular gathering of colonial personalities. This first Colonial Conference consisted of 121 delegates representing the United Kingdom, the self-governing colonies, the Crown Colonies, and Protectorates. The problem arose as to how to reconcile the power of independence of the colonies with some sort of control in external affairs by the United Kingdom. The trend of Dominion development was towards

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effective national independence—the policy of cutting the painter—but, in the end, common sense prevailed in finding a middle way between dependence and disruption. And it was a symptom of growing equality that, from 1907, the phrase Imperial Conference was substituted for Colonial Conference, and the term colony was discarded in favour of the phrase Self-governing Dominions or, more shortly, Dominions.

At these Conferences, the practice of unanimity in arriving at decisions to be followed was adopted. In truth, the Imperial Conferences had neither executive nor legislative powers, for their resolutions were merely recommendations for action to be undertaken by the respective Governments.

As Professor Hancock put it, the technique of persuasion and agreement was taking the place of command and was adequate for the conditions of that time, because there was no dispute about basic principles.

Dominion equality, copiously watered by aspiration and oratory, was growing into a healthy plant, but the young plant was growing in the shade of British ascendancy, for Great Britain was still performing on behalf of the Empire functions which its self-governing members were not ready to share or assume. The Committee of Imperial Defence was a Committee constituted to include the British Prime Minister and whomsoever he chose to summon. Foreign policy in supreme issues affecting all the members of the Empire remained exclusively in the control of the British Cabinet for, as Mr Asquith stated in 1911, that authority cannot be shared. None of the self-governing units demanded anything more than a right to be consulted before the negotiation of international agreements affecting them was concluded. The Empire thus remained a unity because the Dominions remained content in the shelter of inferior status and powers. But there was a rapid change. There was the old world of United Kingdom ascendancy; and there was the new world of Dominion equality.

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During the First World War the bond between the Dominions and Great Britain naturally became closer.

A Commonwealth of Nations

To give expression to this feeling for common unity and co-operation in all matters affecting the interest of the United Kingdom and the Dominions, the phrase British Commonwealth of Nations, or shortly Commonwealth of Nations was adopted. At the Imperial Conference of 1921, this phrase was accepted as a new official designation of the Empire. Lord Rosebery was probably the first to use this phrase, in 1884, but it is to Mr Lionel Curtis that it owes its widespread acceptance. He used the term British Commonwealth of Nations to express what he conceived to be the true principle of development in the British Empire. It may be noted that this term does not imply that the members were all British; Canada was to a large extent peopled by French Canadians; South Africa was composed largely of Africaners; and India, if admitted formally as a Dominion, will be another exception.

Imperial War Cabinet

The Imperial War Cabinet, consisting of the Prime Ministers of the Dominions and five members of the British War Cabinet, met in 1917 under the chairmanship of the Imperial Prime Minister and dealt with the fundamental questions of the First World War. But the term Cabinet was doubtless a misnomer. It was really a Cabinet of Governments. Unlike a true Cabinet as understood in the British Empire, it owed no common responsibility, but consisted of members who were answerable for their actions to different Parliaments. The British Prime Minister was not entitled to act as the head, but so acted by the courtesy due to the greatest partner under the Empire. There were no majority decisions.

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Each of the Governments represented remained unfettered in its subsequent action. This War Cabinet had no executive empowered to carry out its resolution even when unanimous; and each Government had to give its own orders. But though not a Cabinet strictly so called, there was, as Keith remarks, a very real value in the device. The Dominions had voluntarily handed over to the Imperial Government control of their military and naval forces; and it was a great gain indeed that all parts of the Empire should meet in council to discuss the aims for which these forces were being employed and the uses to which they were being put. Of course, in the last resort, the decision lay with the Imperial Government; but that Government would naturally like to be fortified in its action by the approval of the other portions of the Empire. The co-operation thus attained was continued in the shape of the British Empire Peace Delegation of 1919. The separate representation secured to the Dominions and to India was a just recognition of their vast services in the cause of liberty throughout the world. The feeling for common action resulted in an energetic campaign, promoted by the *Round Table* group of political thinkers led by Lionel Curtis, with the object of securing the adoption of some form of Imperial Federation as the only proper means by which the Dominions could take a share in the control of foreign policy. The Imperial War Cabinet in 1918 accepted the principle that the Prime Ministers of the Dominions, as members of the War Cabinet, should have the right of direct communication with the British Prime Minister on all such matters as they deemed of sufficient importance, instead of communicating through the Governor-General and the Secretary of State for the Colonies.

As regards treaties, the Conference of 1923 held that it was desirable that no treaty should be negotiated by any of the Governments of the Empire without due considera-

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tion of its possible effect on other parts of the Empire or on the Empire as a whole. So, before negotiations for a treaty were started, steps should be taken to ensure that any part of the Empire likely to be interested should be informed, so that its Government, if it so considered necessary, might express its views or might even participate in the negotiations.

First World War and the Peace Conference

The position of the Dominions greatly improved as a result of the First World War. They were freely recognized as partners with Great Britain. They took their full share of responsibility for the affairs of the Empire and they enjoyed distinctive representation at the Peace Conference. The Dominions appeared at the Peace Conference in their multiplicity as well as in their unity. In the negotiations leading up to the Treaty and in the signatures to the Peace Treaty, the British Empire presented itself both as one and as many. As a result of the suggestions of Sir Robert Borden, the Canadian Prime Minister, the Treaty was signed by the plenipotentiaries of the Dominions and of India on behalf of their respective Governments, and British plenipotentiaries signed, without any description, on behalf of the whole Empire.

In the Covenant of the League of Nations there was a similar assertion of multiplicity and unity. The Dominions and India were original and independent members of the League. In the Assembly, they could vote separately, but in the Council it was the British Empire as a whole which was granted permanent representation. Thus it was possible for the British Empire and the Dominions to give separate decisions on questions of peace and war.

Imperial Conferences, 1926 and 1930

The British Commonwealth's foreign relationships during the years 1922-6 had become very confused. The

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Dominions had differences of opinion with the United Kingdom regarding questions of foreign policy and were not anxious either for that joint control or joint responsibility which Mr Lloyd George had in the 1921 Conference stated to be of advantage to Great Britain. It was felt that there was need of a Conference between Great Britain and the Dominions to remove any possible misunderstanding or discord in the pursuit of a common foreign policy by all the members of the Commonwealth of Nations. To solve these difficulties, a bold attempt was made at the famous Imperial Conference of 1926. In the Conference Report it was stated that the governing consideration underlying all discussions on the principle of separate responsibility must be that neither Great Britain nor any of the Dominions would be committed to the acceptance of active obligation except with the definite assent of its own Government. The Conference dwelt on the peculiar relationship in which the Members of the Commonwealth stood towards each other—a subject which will be dealt with later on.

This Conference of 1926 was guided by a strong Committee which included all the Prime Ministers and heads of delegations, Lord Balfour being the Chairman. The famous Report of the Conference, known as the Balfour Report, which is the basis of the Statute of Westminster, is a finely accurate description of the existing relations between the various members of the Commonwealth and of the difficulties felt. It revealed the direction of the road along which the Commonwealth had passed and the immediate end which that road was approaching. The principle guiding the intra-Commonwealth relations was Liberty operating within Unity—and maturing into Equality. The Report asserted equality of status as the root principle of such relations.

In the Balfour Report occurs the famous Declaration which appears in the Preamble to the Statute of Westminster:

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'The Dominions are autonomous communities within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown, and freely associated as members of the British Commonwealth of Nations.'

This Declaration had all the advantages of flexibility and ambiguity. It could be all things to all men; as Wheare says, it embodied with admirable skill the difference of emphasis which each Dominion wished to place upon the term of its status. It is to be noted that, in this Declaration, there is no reference to the phrase Dominion Status nor is this defined anywhere in the Balfour Report. From this Report, three distinguishing characteristics of the Dominions may be laid down: (1) They were all territorial communities which shared with Great Britain a common allegiance to the Crown—they all had one common King, which was the bond that united them. By this criterion, the Dominions were distinguished in status from foreign nations in international law and relations. (2) The Dominions are all equal in status to Great Britain and, therefore, equal in status to one another. They were in no way subordinate one to another in any aspect of their domestic or external affairs. This implied that the Parliament and Government of each Dominion, in conducting its domestic and external affairs, was to be in no way subject to control by the Parliament or Government of Great Britain or of any other Dominion. (3) The Dominions are 'freely associated' as members of the Commonwealth. But what was the nature of the aggregate which the various members of the Commonwealth formed? Was it a federation, a confederation, an alliance or a union? Was the implication that the various constituents of their own free will associate together to form the British Commonwealth of Nations, and therefore was it open to any one of them to sever that association if it so

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chose? In other words, was the right to secede included in, or excluded by, the phrase 'freely associated as members of the British Commonwealth of Nations'?

Thus three indispensable elements in Dominion Status were laid down in the Declaration. A Dominion was a territorial community 'other than Great Britain' which owed allegiance to the King of England; was equal in status to Great Britain and with other Dominions; and was freely associated with Great Britain and other Dominions.

The Balfour Report dwelt briefly on some existing inequalities of status, of which the most important were:

(1) Inequality of status as a result of convention, in the position of the Governor-General of a Dominion. The Governor-General was the representative of His Majesty; His Majesty acted on the advice of His Majesty's Government in Great Britain; so the Governor-General might seem to be the representative of that Government; and hence it might follow that a part of the constitutional structure of the Dominion was under the control, in practice, of His Majesty's Government in the United Kingdom.

(2) Another convention of inequality of status arose from His Majesty's power of disallowance and power of reservation.

(3) There was the legal inequality arising from the fact that the Dominion Parliaments were unable to pass extra-territorial laws.

(4) There was an element of legal inequality of status in the legislative omnipotence of the Parliament of Great Britain.

(5) There was the conventional inequality of status due to the fact that, regarding the conduct of foreign relations, His Majesty's Government in Great Britain might still advise His Majesty to commit the whole Empire to international obligations.

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The Imperial Conference of 1930 made its Report regarding the inequalities in the status of the Dominions mentioned in the Balfour Report, by applying the principles of freedom, equality and co-operation to those cases where law or practice still remained inconsistent with them. It was agreed that disallowance and reservation by the Crown were not in accord with the existing constitutional practice; and the uncertain position regarding power to pass extra-territorial legislation in the Dominions would best be removed by means of a declaratory enactment made by the Parliament of the United Kingdom with the consent of the Dominions. It was proposed that a Statute should be enacted in the United Kingdom to remove the various difficulties. As a result of this Report, the famous Statute of Westminster was passed.

Statute of Westminster, 1931

The Statute of Westminster forms a very important landmark in the history of the growth and status of the Dominions. It was an Act to give effect to certain resolutions passed by the Imperial Conferences held in 1926 and 1930. It is a short Act consisting of 5 paragraphs of Preamble and 12 Sections. In the Preamble it was, *inter alia*, declared that the Crown is the symbol of the free association of the members of the British Commonwealth of Nations, and they are united by a common allegiance to the Crown; that it was in accord with the established constitutional position that no law hereafter made by the British Parliament is to extend to any of the Dominions otherwise than at the request, and with the consent, of the Dominion; and that Canada, Australia, New Zealand, South Africa, the Irish Free State and Newfoundland have severally requested and consented to the submission of a measure to the British Parliament for making provisions with regard to the above matters. In Section 1,

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the term Dominion was defined as meaning any of the following:—Canada, Australia, New Zealand, South Africa, the Irish Free State and Newfoundland.¹ In Section 2, it is provided that no law made after the Statute by a Dominion Parliament is to be void on the ground of repugnancy to any law of England, present or future; and the powers of a Dominion Parliament include the power to repeal or amend any such Act so far as it affects that Dominion. Section 3 provides that a Dominion Parliament has full powers to make laws having extra-territorial operation; and by Section 4 it is provided that no English Act passed after the Statute is to apply to a Dominion unless it is expressly declared in that English Act that that Dominion has requested, and consented to, the enactment. No doubt the English Parliament is legislatively omnipotent, but there is a conventional (though not legal) limitation on its legislative sovereignty.

The term Dominion had a conventional and a legal existence before 1926; but the Dominions were included in the term Colony by the Interpretation Act, 1889. Section 2 of the Statute enacted that the term Colony shall not, in any Act of the English Parliament passed after this Statute, include a Dominion or a part of it.

There is nothing in the Statute to show that it is in any sense an agreement between the six Dominions mentioned in Section 1. It is true that the Preamble of the Statute states that it gives effect to certain of the recommendations made by the Imperial Conferences of 1926 and 1930. But probably this does not prevent the inclusion in the Statute of any other country not mentioned in Section 1. Thus, for instance, if the United Kingdom is agreeable to include India, Burma or Ceylon within the ambit of the Statute, it is submitted that no objection can be made by any of

¹ Newfoundland voluntarily relinquished Dominion Status in 1933 owing to financial difficulties, and is now governed by a Commission.

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the Dominions mentioned in Section 1 of the Statute, as this is a matter entirely between England and India, Burma or Ceylon in which none of the Dominions can have any voice.

On the other hand, it may be urged that probably there is a fundamental conventional rule (not mentioned in the Balfour Report) that the admission of a new member of the Commonwealth requires the consent of all. As regards the admission of a territory already within the Empire, which is a dependency of a member of the Commonwealth without full autonomy (like India), that member may accord complete self-governing status to that territory. This may not *ipso facto* make that territory a member of the group. But in the case of India, it is to be noted that representatives of India were welcomed at the Imperial War Conference, 1917, and it was emphatically declared at the Imperial Conference of 1923 that India was no longer a dependency but a component part of the British Commonwealth and a complete equal at the Conference. By such welcome and admittance of India to the Conference, the members of the Commonwealth must be taken to have consented in advance to India's being admitted as a member, on grant of full autonomy by the United Kingdom.

Dominion Status

The term Dominion Status cannot be defined in terms of strict law. It is now used as an expression to describe the constitutional and international position of five of the Dominions mentioned in Section 1 of the Statute. This position is to be deduced partly from rules of strict law and partly from non-legal rules, such as Constitutional Conventions; the most important rules of strict law defining Dominion Status are found in the Statute itself. The most important parts of the non-legal rules are to be found

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in the Constitutional Conventions between Great Britain and the Dominions as set forth in the Reports of the Imperial Conferences of 1926 and 1930. Thus Dominion Status has two sources, and is a result of the association of law with Constitutional Conventions. As Wheare points out, it requires correlation of the two elements—rules of strict law, and non-legal rules—to describe the Constitutional Status of the Dominions, and it is this status which is known by the term Dominion Status.

As corollaries to Dominion Status, two matters come up: the relation between the members of the Commonwealth and the so-called right of secession.

What is the nature of the inter-Commonwealth relations? Were the members of the Commonwealth of Nations persons in the eye of International Law, or was theirs a very special relationship that did not attract International Law? The prevalent doctrine was what may be called the *inter se* doctrine in the Commonwealth—the doctrine which asserts that the relations between members of the Commonwealth are *sui generis* and more intimate than relations between other nations, that such intimate relations are quite distinct from International relations. From this *inter se* doctrine there followed (1) the principle of a common citizenship; (2) the symbolism attached to the Crown as a common bond uniting the different elements of the Empire; and (3) the fact that mutual envoys of members are called not Ambassadors (as under International Law) but High Commissioners.

The attitude of the Governments of the Commonwealth to the submission of inter-Commonwealth disputes to the permanent Court of International Justice of the League exhibits clearly the way in which the *inter se* doctrine is regarded by the various Dominions. In 1929, Great Britain and all the Dominions adhered to the optional clause of the Statute of that Court, by which

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they all recognized, in disputes of a legal character, the jurisdiction of the Court as compulsory and without special agreement in relation to all other States adhering to this clause. But the United Kingdom adhered to this clause with the reservation that disputes between members of the Commonwealth who are also members of the League should be settled in such manner as the parties have agreed or shall agree. The explanation given for this reservation was that the members of the Commonwealth, though international units in the fullest sense of the term, are united by their common allegiance to the Crown; and so disputes between them should be dealt with by some other mode of settlement. Canada, Australia, South Africa, New Zealand and India made similar reservations. The Imperial Conference of 1930 drew up a scheme for voluntary *ad hoc* Tribunals in justiciable inter-Commonwealth disputes.

The Right of Secession

The phrase 'right of secession', as Hancock points out, has been misused like all legal or pseudo-legal terms which become the ammunition of political controversy. It does not imply a real desire of those who use it to cut the painter; but what they desire is rather the freedom to secede if they should so wish—a purely political objective. After the 1926 Imperial Conference, a question was raised about this right of secession. General Smuts was of opinion that the Resolutions of the Conference did not confer a right of secession in law; but General Hertzog was of a different opinion. Mr Bonar Law, Leader of the Conservative Party in Parliament, thought that the Dominions enjoyed this right to secede. In 1920 he said: 'If the self-governing Dominions chose tomorrow to say "we will no longer make a part to the British Empire", we would not try to force them. Dominion Home Rule means the right to decide their own destinies.'

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to the United Kingdom. In theory, the legal omnipotence of the Imperial Parliament remains, but is limited by convention. Anomalies there are, but they are smoothed over by the interaction and co-operation of laws and conventions. The Dominions have the right, by agreement with the British Government, to have their representatives in foreign countries and to send envoys in exchange. Treaties are ratified by the king on the advice of the Foreign Secretary; so no treaty affecting the interest of any part of the Empire is made without that part being consulted. The Imperial Government has the power to make war and peace and conducts most of the foreign business of the Dominions.

India

The Dominions, as described above, were mainly occupied by Europeans, who acquired practical independence. Besides the Dominions, the British Commonwealth of Nations includes other portions of the British Empire inhabited by non-Europeans, like India and Ceylon which are expected shortly to acquire the position of Dominions.

As Hancock says, the British Empire is a tremendous experiment in the art of government of men by themselves; and the British Commonwealth of Nations is to be regarded as the whole British Empire viewed in the light of this experiment. One of these tremendous experiments is the Indian Empire.

The position of India *vis-à-vis* the Dominions will now be dealt with.

In 1917, India was admitted to the Imperial Conference, as 'the juniormost traveller on the high road of self-government'. As Hancock remarks, by admitting India, the Conference had irrevocably committed itself against any general theory of European exclusiveness.

There were indeed anomalies in India's presence at the Conference. The members of the 'Inner Empire' had

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previously relegated India to the outer darkness. In 1911, the New Zealand representative deprecated any feeling of superiority towards 'our fellow British subject in India, and he admitted that the Indians had a right to the fullest consideration upon a score of race; and that their pride in their civilization was no less deep and worthy of respect than that of the self-governing Dominions. In 1911, the generally accepted idea at the Conference was that India would continue to progress towards self-government; and the Dominions would negotiate directly with an Indian Government closely in touch with Indian opinion. Old ideas of racial arrogance were dropped and the principle of equality and reciprocity between India and the Dominions was established. In 1917, as a result of the part played by India in the First World War, Indian representatives consisting of the late Maharaja of Bikaner and Lord Sinha of Raipur were welcomed at the Imperial Conference. The spokesmen of Great Britain and of each of the Dominions vied with each other in friendly tribute to India. A resolution was adopted that necessary steps be taken to modify the resolution of 1907 fixing the constitution of the Imperial Conference, so as to permit India to attend it as of right. It is to be noted that the political status of India at this time was far below that of a self-governing Dominion; but she had qualified for admission on equal terms with the Dominions at the Conference by her extraordinary services to the British Empire in the late war and she had achieved the equality of a comrade-in-arms. But it is to be noted also that the Dominion statesmen at the Conference found some difficulty in reconciling India's subordinate political status with the principle of equality and self-government which they had affirmed to be the basis of the Empire's constitution. In 1907, the Conference had declared that the Dominions were 'autonomous nations of an Imperial Commonwealth' and India was 'an important

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part of the same'. So the admission of India to the Conference in 1917 was a recognition of the fact that self-government was India's destiny, for India, said a Dominion Minister, had established the right to be at the Conference. The Rt Hon'ble Mr Srinivasa Sastri remarked at the Imperial Conference of 1921: 'We have not yet acquired full Dominion Status, but we realize that we are planted firmly on the road to the acquisition of that status.'

At the Imperial Conference of 1923, the Australian and New Zealand Prime Ministers asserted emphatically that India was no longer a Dependency but a component part of the British Commonwealth and a complete equal at the Imperial Conference. The Indian representatives at the Conference came by nomination from the Indian Government and not by way of right, unlike the representatives of the Dominions who came in virtue of their being Prime Ministers.

After the First World War, there arose gradually a conflict between some of the Dominions, on the one hand, and India on the other, regarding the treatment of Indians resident in those Dominions and the right of entry therein. This led to a bitter controversy, especially between South Africa and India, and the conflict reached its crisis at the Imperial Conference of 1923. Sir Tej Bahadur Sapru, speaking for India, complained of an indignity which 'cuts to the quick our national pride and our new conscience, which permeates and sours our whole outlook in regard to Imperial Partnership'. Sir Tej Bahadur stated that, when he said he would be content with a place in King George's household, he never meant he would be content with a place in the king's stables.

India and the League of Nations

India is an original member of the League of Nations. Since the First World War, the position of India *vis-à-vis* the League of Nations has greatly improved. At the

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Peace Conference, India along with the Dominion attended the session. The Peace Treaty was signed by the representatives of India as one of the high contracting parties. In 1917 and 1918, the Imperial Conference recognized the right of India to regulate migration for pleasure, subject to the principle that visits for pleasure, business or education should be facilitated. In 1927, an agreement between South Africa and India regarding the position of Indians in South Africa was concluded. She has the same status as any other member *vis-à-vis* the permanent Court of International Justice, the International Labor Office, the Assembly, the Council and the Secretariat of the League. In numerous international agreements and conventions, India is a party independent of Great Britain and her status in the League is the same as that of the Dominion.

Indian States and Dominion Status

The question as to the position of the Indian States and Dominion Status is obtained by British India is one of some difficulty. The present status of the Indian States is admittedly anomalous. Their Rulers have, to a large extent, power to conduct internal administration without much interference by the British Crown, except in case of gross misgovernment. They are not subject to the jurisdiction of the British Courts, civil or criminal; and they may be said to enjoy qualified internal sovereignty. They have no right to enter into relations with foreign powers. The Indian States stand in a peculiar relationship with the British Crown as Paramount Power in India. Such relationship is governed neither by International Law nor by Municipal Law. It is *sui generis*. It is not merely contractual, resting on treaties made long ago; but it is living, growing relationship shaped by circumstances and policy. This relationship is not fixed, rigid or static, but adaptable, mobile or dynamic in character.

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There are two extreme views as to the position of the States. One is that they are an anomaly; that they are a hindrance to the unity and advance of India as a whole; the geographical unity of India must lead to political unity. The State subjects have, along with the British subjects, a common heritage, a common culture, common traditions, common religion and common loyalty to their motherland. So they should both have exactly the same political rights and obligations. The other view is that the Ruler is omnipotent and should be left free by the Paramount Power to do what he likes in his State; that his subjects should be entirely under his control, enjoying such privileges as he chooses to give.

As regards Federation, the general feeling in British India is probably that the Indian States ought not to be a hindrance to the progress of India; that absolutism whether in British India or in Indian States should be abolished. According to some States, there should be 'Unity without Uniformity', implying a federation loosely built, allowing the States to develop their special genius. The other point of view is represented by the slogan 'Union without Unity'—Federation, if we must have it, is to be on the loosest basis, or separation in the alternative. The first view implies the ultimate extinction of paramountcy. The second view leaves paramountcy as a protection against nationalism, as the bulwark of its special privileges and powers.

If British India attains self-government with Dominion Status, it would be difficult to deny the claims of the State subjects to political rights and privileges on a par with those enjoyed by British Indian subjects. So perhaps it may be anticipated that the attainment of Dominion Status will not be very welcome to the Rulers of Indian States as a whole unless they are safeguarded by express provisions against further encroachment on their powers, either by the British Crown or by calls of democracy.

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Union among all the leading Indian States may be visualized, with the small States attached to them. Such a Union may acquire great power and prestige and stand on its own strength, apart from Treaties and Paramountcy; and such a Union may deal on an equal footing with the British Indian Federation and with Great Britain, which may then forgo claims of paramountcy. Then this Union of Indian States can surely acquire Dominion Status like British India. In any event, the paramountcy over India must be transferred from London to Delhi.

India Now

The position of India as a result of the Second World War has vastly improved. She has done tremendous work for the cause of freedom and democracy and has acquired great influence and position as a creditor country for the first time in history. Her position as a member of the family of the Commonwealth of Nations is now fully assured; and the principles of equality and reciprocity between India and the Dominions have been recognized. India has a High Commissioner in the United Kingdom and in South Africa. She has a representative of her Government in Ceylon and an Agent-General in the U.S.A. She has a High Commissioner in Australia and there is an Australian High Commissioner at New Delhi. India has, therefore, all the attributes entitling her formally to be enrolled in the list of statutory Dominions. As already explained, a Dominion has a position of independence, and as a member of the Commonwealth of Nations is assured peace and security and a possible right of secession. India for her own welfare and the welfare of the democracies of the world must play her legitimate part in the council of free nations.

Complete self-government may easily be granted to India within the framework of the Government of India Act, 1935, without formal amendment, by convention—e.g.

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amendment of the Governor-General's Instrument of Instructions; the gradual establishment of Cabinet responsibility; the relaxation of the control of the Secretary of State under Section 14; and the vesting by Parliament in the Governor-General or Governors of appointments to certain services hitherto made by the Secretary of State under Section 244.

Formal recognition of India's being a Dominion may be accorded by an amendment of the Statute of Westminster.

After this war, when India has played her part at the forthcoming Peace Conference, she will take a prominent place in the international sphere; for today nationalism is no longer a badge of freedom; today other freedoms, not exclusively or primarily political, are in the air, and there are demands for the attainment of, not national, but international measures and instruments. Field Marshal Smuts said in December 1943, in Cairo: 'The human family continues in its long arduous march, but takes a new turn. The significance of this war is that it is the first step towards the greater liberty which is coming to us. The world is on the move. Something is stirring in the far East which has not been achieved for thousands of years. I think the elements are gathering for something bigger than anything that has ever happened in the heart of human endeavour.'

India will come forward to take her proper sphere in the Commonwealth of Nations, in close unity and co-operation with the other members. Isolationism is out of the question for her welfare and that of the democracies of the world.

Isolationism and Imperialism

The old ideas of independence and of nationalism must make way for more up-to-date conceptions. The days of independence, in the sense of the assertive segregation of each national unit and its liberty to fashion its society and its future without reference to the rest of the world, are

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dead. As Mr Mackenzie King put it recently, there is no national security to be found in the isolation of any nation or group of nations; for no nation liveth unto itself, and as no nation of itself can ensure its own safety, so no nation or group of nations can in isolation ensure its own prosperity. Space and time have been conquered by science, and in the wake of this conquest has come the inevitable elimination of all possible isolation of human activities. Isolationism is 'dead and damned', in the U.S.A. or in the U.S.S.R. or elsewhere. All the world over, there is a conscious and a deliberate move towards interdependence. Some sort of an international society is called for, and international activity and international joint effort are essential for post-war reconstruction. And Imperialism must go. Freedom means the orderly but scheduled abolition of the colonial system. The British Commonwealth is the most spectacular example of such an orderly process, said Mr Wendell Willkie; but Great Britain has still numerous colonies, remnants of empire with little or no self-rule, though many English people are striving towards reducing those remnants, by extending the principle of the Commonwealth in place of the colonial system. So, in this sense, the British Empire must be liquidated.

Conclusion

This is a war of liberation. The thirty-one United Nations are agreed that their common job of liberation includes giving to all people freedom to govern themselves, freedom to work out their own destiny under governments selected by themselves, and economic freedom. This war must mean an end to the empire of nations over other nations. Freedom and opportunity are the watchwords of the East—the Sleeper that is Awakening—the mighty giant that is feeling his own strength, that is longing to play his proper part in the shaping of the destinies of the world.

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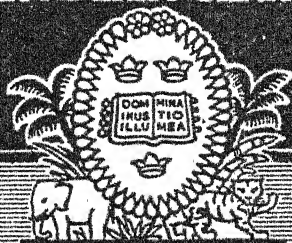
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WINNING THE PEACE

BY

F. L. BRAYNE



HUMPHREY MILFORD
OXFORD UNIVERSITY PRESS

WHAT will happen to the million young soldiers who will no longer be needed in the Army at the end of the war? India is, and must for long remain, a country of villages, dependent mainly on agriculture and small-scale industry. While heavy industries are being developed by other agencies, it is urged that the ex-soldiers should be used to guide and stimulate progress in the villages. The million ex-soldiers can and should be harnessed to carry through a great plan of national reconstruction; and the plan should be ready to put into operation as soon as hostilities cease.

Frank Lugard Brayne, C.S.I., C.I.E., M.C., I.C.S. (retd.), is now a Brigadier in the Indian Army, concerned with the welfare of Indian troops. His experiments in rural reconstruction in the Gurgaon district of the Punjab in the 1920's won commendation alike from the Simon Commission and Mahatma Gandhi. He has developed his ideas in a series of hard-hitting dialogues between 'Socrates' and Indian villagers, and is the author of a manual of rural reconstruction entitled *Better Villages*.

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WINNING THE PEACE

The Ex-Soldier

At the end of the war more than a million magnificent young men will be unloaded into the villages of India. They will be in splendid physical condition, accustomed to good regular food and plenty of exercise. They have fought with conspicuous gallantry. They have been treated with respect and affection by their officers and by the people of many countries. They have acquired self-respect and a very high standard of living. They have become used to modern conditions of housing and sanitation. They have seen new countries and places, have learned new trades, acquired new skills, have learned indoor and outdoor games and become familiar with radio, picture papers, gramophones and cinemas. The whole mental outlook of these young men has been changed. ✕

To what are these men returning? Many of the villages are unorganized, insanitary, overcrowded and uncomfortable. Many of the houses are small, dark and smoke-ridden. Most of the old folks at home are narrow-minded, conservative, uneducated and untravelled. There are no organized games and recreations, no books, no daily newspapers, no radio, no shows, exhibitions and tournaments, no opportunities of meeting and exchanging ideas and experiences with one's fellows. The corruption of petty officials makes rural life uneasy and troublesome. The villages are often torn by feuds, and in some parts lawlessness, violence and the making of illicit liquor are increasing. Worst of all, perhaps, the soldiers' womenfolk have not been exposed to any of the

* This is an idealized³ picture of the soldier & does not fit in with actualities

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modernizing influences which have so changed the men; they are still completely uneducated and have rarely been outside the boundaries of their village. They will meet the soldiers' new outlook with an uncompromising medievalism.

The returning soldier has been told that he is fighting for a new world of happiness and justice. He has been promised a bright future. He has been taught that village life can and should be healthy, peaceful and progressive. He will find the villages run by cliques who resent progress, oppose those who try to do anything new, and by intrigue or mischief trip up anyone who tries to come into prominence as a teacher or practiser of the new way of life. The returning soldier will be the prey of every kind of theorist, agitator, grumbler and grievance-hunter.

What will happen to our ex-soldier and how will the village receive him? Will the magic word 'home' cause him to shed his ideas and enlightenment, to abandon his habits of vigorous thought and action and, while resisting all evil influences, to slip quietly back into the easy-going groove of the ancient ways and customs? Or will he explode and become either a fervent reformer, a red-hot enemy of all government, or a violent and dangerous criminal?

If we are to fit the modern soldier peacefully back again into the ancient village, we must harness his comradeship, initiative and training to a carefully planned scheme of national reconstruction, a great movement of rural development and culture. The standard of living of the whole country must be raised—it is obviously impossible to keep the ex-soldier's standard high while the rest of the people are left as they were—and in this process the ex-soldier must be made a pioneer and administrator of a new way of life. Two things, then, are required—a great plan for

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national reconstruction and the preparation of the soldier to assist in carrying it out.

This work of preparation of the soldier is already going on. Village uplift and vocational training are two of the principal subjects of the Directorate General of Welfare, Education and Resettlement, and are regularly taught by regimental officers in parade hours. Special pamphlets of all kinds are issued. Films, pictures, posters, radio talks, dramas and other kinds of popular education are being planned, and some have already started, to interest the men in the subject, while in training centres exhibitions and small but well-equipped farms are being established where every kind of profitable work can be taught and demonstrated.

Practical training in every possible activity—farming, cottage industries, handicrafts, etc.—is being planned for the Armistice period when, of course, all this kind of education will be greatly intensified. An organization to improve and develop contacts between the military, the civil and the ex-soldier after the war has been developed by means of Liaison Officers and revived Soldiers' Boards. Employment bureaus and agencies are being established to enable those who want it to find work in industry and all kinds of service.

A Savings Scheme for serving soldiers is being worked out and the Army has opened a post-war reconstruction fund. This fund already contains several crores of rupees and will be used to assist in financing schemes of permanent benefit to the ex-soldier and the soldier class and in enabling ex-soldiers to make the most of the civil plans. This fund is not a general fund and will not replace civil funds or relieve the civil government from providing money for all kinds of development.

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The Health and Welfare Centres for the women in the married lines are being expanded into instructional centres, where women can learn some of the many things that a housewife ought to know to enable her to run a home and keep her family in health.

Do not let it be imagined that the serving soldier is not interested in rural development or that 'uplift' is a dull subject. The very reverse. The soldier is intensely interested in the possibility of improving his home and village, and uplift is an excellent subject for discussion in the hands of those who understand it and believe in it.

Who knows that, by putting a blue print of a better India into the hands of this vast body of trained and disciplined young men, we may not throw up constructive leaders who will return home to lift their country to a great place among the United Nations?

Holding the Ex-Soldiers Together

These proposals make the soldier the most important man in the village. I see no harm in this. He has saved his country in war time; let him save it in peace time too. In any case there is no alternative. In years gone by too little use has been made of the ex-soldier's special qualities of loyalty, discipline and a high standard of living. Except where the soldier class forms the majority of the population, the ex-soldier has often had to be content to play second fiddle. The last war never came near India. This war has already come near. The Indian soldier is very definitely and obviously going to save his country. The civil official, and non-official, may therefore be more easily persuaded to put the ex-soldier on a level with himself after this war and to co-operate with him in winning the peace. In any

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case it must be clearly realized that every ex-soldier who is idle after the war will be a source of potential danger to the peace of his country and will be an asset to his country's progress wasted. Civil commotion will cost as much as development. Five thousand men employed as extra magistrates—police and jailors, will cost as much as the same number employed as organizers of a higher standard of living. A million and a half soldiers will come home with money in their pockets and ideas in their heads. Are we so blind or so hidebound that we cannot use them to build a new and better India?

Some people would like the ex-soldier to forget that he was ever in the Army, and to revert entirely to civilian status. This must never be allowed. It will be a terrible mistake to try to demilitarize the soldier when he returns to his village and to tell him that he must forget his old loyalties and become only a citizen. The soldier must never be allowed to forget that he was once a soldier. The virtues of the soldier must be carefully preserved and applied to the purpose of peace and good citizenship. The organizing of rallies and reunions will therefore be a great feature of post-war rural activities on Armistice day, battle anniversaries and other high days.

It is important, then, that ex-soldiers should be held together after the war. The only way to achieve this is by organizing the soldiers in every village and town, and the ideal organization for this purpose is the co-operative. It is well understood all over India, it is carefully and closely supervised by Government and it has its own statute to assist and protect it. Every village should have one or more co-operative societies including all the soldiers and as many others as possible who will join them.

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If we try to make some new form of organization, we shall have to buy all our experience from the very beginning and it may be twenty years before we learn how to organize and run it properly. Meanwhile, the mischief we are trying to avoid will be done and the soldiers will disintegrate and, instead of being pioneers of a new and better life for India, will become bad citizens and a debit and menace rather than an asset to their country.

The objective of the society might be what is known as Better Living, which means village uplift. The first thing the society would do would be to get a reading room, a radio set and some books and newspapers, then a recreation ground. Thereafter it would take up the various items of the uplift programme as fast as the members are ready to carry them out. It would act as peacemaker in any squabbles which might occur among its members and so prevent feuds and litigation. In the case of landless men the society might be a co-operative industrial society. Where land requires consolidation or conservation, this might be the object of the society. The actual work for which the society is founded matters little; it is the co-operative machinery and the co-operative spirit which are wanted to bind together the ex-soldiers and their neighbours.

Such societies would be held together not only by the inspecting staff who, of course, would be ex-soldiers and ex-officers, but there could be a special radio programme for them and special articles in the *Fauji Akhbar*, and special pamphlets besides the local district village uplift newspapers.

Two objections have been raised to such an organization: one is the bogey of Fascism, which is of course nonsense as these societies will be no more likely to become Fascist than

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any other society, and the other is that the soldiers will be segregated instead of being a leavening influence for the whole community. This will be avoided by enlisting as many other people as possible who will join with the soldiers in the campaign of uplift. The co-operative organization has been going for nearly forty years and has bought all its experience so that it is now well understood and well managed. Co-operative credit is still very difficult but we do not propose to organize soldiers in credit societies. If they wish for credit, they can get it in the ordinary way. Our societies will be Better Living Societies. These are an unqualified success in many places and could be made successful in every village in India, given the sort of leadership which we hope the ex-soldier members and ex-soldier supervising staff will provide.

Nor must the soldiers' womenfolk be forgotten. They have missed all the modernizing influences now being brought to bear on their menfolk. Unless they are educated and trained, the enlisted classes will continue to be a backward class in civil life. After the last war the possibility of the soldier having daughters as well as sons to be educated was overlooked, and although splendid schools were founded for soldiers' sons, nothing was done for soldiers' daughters. The V.C.O. class has been greatly handicapped thereby in comparison with the urban and middle classes, whose womenfolk usually receive at least some education. After this war all war memorials must take the form of something for the women—education, domestic training, scholarships, medical aid, maternity aid.

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'Uplift' or Post-War Reconstruction

As for the development of India, it is the professed object of the leaders of the United Nations to develop backward countries and to raise their standard of living.

India is backward and undeveloped, and has in many places a low standard of living. This is no disparagement of the work of the British in India. It is the very soundness of the foundations laid and the very greatness of what has already been done in India that have made still greater things both possible and urgently necessary. Of late years the British in India have been more concerned with political issues, with transferring authority and office than with introducing the kind of legislation, taxation and executive action which have had such a marked effect on standards of health and well-being in their own country. And before blaming either British or Indian for what has not been done, one must realize that a flat-out uplift movement must mean the tackling of many of India's most cherished ways and customs.

There has never been any general attempt to develop the country, and Lord Hailey admitted in 1927 that the so-called 'Gurgaon Experiment' was the first direct attack upon the standard of living in rural India. That experiment was only partially copied in the Punjab and its lesson was entirely lost on most of the rest of India.

To raise the standard of living, it is necessary:

- (1) to raise the purchasing power and the taxability of the common people;
- (2) to create such a desire for a higher standard of living among them that they will eagerly do the extra work and eagerly undergo the self-denial necessary to achieve it. Such a desire is at present very rare.

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(1) *Raising of Purchasing Power and Taxability.* The research work already done has amply proved that the produce of the soil can be doubled or trebled. What is more, with India's ever-increasing population the increase of the produce of the soil—both in quantity and quality—is an absolute necessity. Indian crops and stock yields are some of the lowest in the world—the milk yield is far the lowest. The rural industries and the business methods of the people are capable of infinite improvement. Over very large areas the terms and conditions of land tenure definitely discourage the tiller of the soil from doing his best. Too little of what comes out of the soil ever goes back into it either as capital or as manure. The efficiency of the people is much reduced by easily avoidable ill-health, disease and malnutrition. Vast areas of land are eroding and losing their vegetation, soil and water reserves. Vast quantities of water run to waste in the rivers. There are vast areas where subsoil water can be used to supplement the rainfall. Vast sources of water power are neglected. Far too little labour, brains and capital are applied to the soil of India. Diseases of animals and crops are allowed a free hand. Communications are very undeveloped. Rural industries of all kinds are neglected.

(2) *The Standard of Living and the Urge to Raise it.* There is among the common people a desire for certain forms of comfort and indulgence; but no general desire for a genuinely higher standard of living such as will make everyone work, work together and deny themselves to obtain and maintain it. For instance, saving is the foundation of a higher standard of living but there is no general system of saving in India and no general desire to save. Money is spent as fast as it is earned. Good harvests mean a 'good

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time', and not a bit put by for the next failure of the monsoon.

By a high standard of living I mean good hygienic houses and sanitary surroundings, pure drinking water, good food, clothes, education and medical aid for both boys and girls. Maternity services, culture, flowers, books, pictures, radios, games and recreation. What this higher standard of living will mean is pictured in the concluding section of this pamphlet entitled 'The New Order in Home and Village'.

The common people still have the mental outlook of the days when man, beast and crop were the playthings of diseases, famine and disaster, when 'Eat, drink and be merry, for tomorrow we die' was a sound philosophy. Scientific and administrative control of nature is still too new to have affected the general outlook and habits of the common people.

Until there is a burning desire to achieve and maintain a higher standard of living, it is extremely difficult to spread the use of better methods, and yet this psychological problem has not only never been tackled; its existence has not yet been recognized.

To instil a desire for a higher standard of living, the following are required:

- (a) A full campaign of publicity, using all ancient and modern, Western and indigenous methods. (Publicity has in the past been usually regarded by Government as bad form if not slightly indecent—certainly not worth spending money on.)
- (b) Education must also be roped in. Education often regards Uplift as beneath its notice. But education has been accused of being very unpractical, divorced from the needs and realities of India and at least partially responsible for much of our stagnation.

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- (c) Leadership must be developed among the people themselves, and they must be organized, co-operatively and in every other way possible for their betterment.
- (d) The standard of living is largely a domestic matter and therefore in the hands of the women who run the home and bring up the children. Until their help is enlisted we shall get nowhere. India has conducted the unique, expensive and disastrous experiment of trying to spread civilization by means of 'men only'. This must cease. Girls' education must be brought up level with boys'. Medical aid, maternity services, women's institutes, domestic training and all other means of welfare and instruction must become universal.
- (e) The whole machinery of Government must be harnessed to this great objective of the welfare of the common people. All officials and public servants from the top to the bottom must be specially trained in this work and the new spirit of helpfulness must become normal and not be sneered at as 'missionary'. Any leopards who cannot change their spots must be got rid of.

All this will cost money, but India was never before in such a strong financial position. And the cost will be a mere bagatelle compared with the results which will accrue in increased happiness and well-being. The alternative is the continuance of needless human suffering and poverty, stagnation and unconstructive and frustrated politics.

Whatever Government rules India after the war will expect to take over a business in full running order, and to find plans in such an advanced stage of readiness that the ex-soldier and his savings and all surplus war stores which are suitable may be absorbed and usefully employed in post-war reconstruction. The present Government will

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never be forgiven if it makes no plans to enable India to take the post-war tide at the flood. Youth craves for ideals, and one of the principal causes of the present attitude of young India is the absence of any but political ideals and the feeling that the welfare of the common people is not always the principal objective. A comprehensive programme of economic and social betterment that kept everyone busy, body and mind, would do more than anything else to ease the solution of the constitutional problem. In the Army good welfare makes easy discipline. In civil life good welfare will make easy politics.

Objective of a Development Scheme

The objective is an all-round raising of the standard of living in town and country—in short, Better Homes, Better Living and Better Livelihood.

There will be a direct and special movement for the improvement of the homes of the common people, both for its own sake, as the home is the centre of the race and better homes are the crown of any uplift movement, and because, until the desire for better homes is implanted in their hearts, people will never consent to do the extra work and the saving, scraping and self-denial necessary. The centre of the home is the housewife, and her welfare, education and training must therefore be the core of any scheme of national progress and development.

The common man prays for strong, just and efficient administration and his four freedoms are:

- (1) Freedom from debt, hunger and insecurity of crops and food.
- (2) Freedom from disease and suffering.

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- (3) Freedom from ignorance and boredom.
- (4) Freedom from faction, quarrelling, litigation and the tyranny of petty officials.

Programme of the Scheme

India is and probably always will be a predominantly agricultural country. Her development policy will therefore be built round the land and the people who live on it. Hitherto the land has often been neglected and far too little money, brains and labour have been applied to it. Industry too must be developed just as fast as we can do it, but agricultural development must be the foundation of the whole.

So vast is the population that is now and probably always will be dependent on the land compared with the numbers that can be absorbed in industry even in the most ideal conditions that can be conceived, and so great are the possibilities of raising their standards of living that, for a long time, if not always, there will be a far larger market for industrial products in the rural areas than for agricultural products in the urban and industrial areas. It will therefore be far more important to cultivate foreign markets for agricultural produce than for industrial goods.

Farming and the Land

It is not possible in this pamphlet to go in detail into the plan to make India a land of prosperous and efficient farmers—that subject is dealt with more fully in my book, *Better Villages*. Here we need only call attention to one or two of the most crying needs.

India is drying up, and it can be safely said that soil erosion is the biggest single cause of poverty in India today.

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We are wasting our assets of soil and water, and so every scheme of land development becomes increasingly costly to execute and maintain and gives less and less return. This is one of the most urgent of India's problems. There are other ways too in which we are wasting our resources—we use bad seed where good seed is available. We allow holdings to become hopelessly fragmented and far too small to be properly workable. We fail to make available to the cultivator the new developments and discoveries of science and experience and we do not see that finance is made available to enable him to use that knowledge. We do not encourage the farmer to fresh effort by guaranteeing him a fair price or by seeing that cheap and easy systems of transport and communications are available for his produce. Worse still, we allow him to remain uneducated—and therefore unwilling to adopt new methods—and we fail to provide first-class health and medical services, without which he can never be as efficient and hardworking as is to be desired. Our systems of land revenue and ownership, too, require radical revision. Whenever possible, the tiller himself should become the owner of the soil—at present far too much of the crop goes to the various non-cultivating right-holders, landholders, mortgagees, etc. and too much of the sale price of the crops goes to middlemen.

Land will be considered as a trust and anyone allowing it to erode or otherwise neglecting it or the people who live on it, or not making the best use of it for agricultural purposes, will be liable to have it bought at a fair price by the State, reconditioned and leased to cultivators who, if they fulfil the conditions of good husbandry and good living, will be entitled to purchase their holdings from Government but will not be allowed to alienate except to heirs and collaterals.

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These are perhaps the main directions in which something will have to be done quickly if India's agriculture is to develop fast enough to cope with the increasing population and to give India a better standard of living. Soil erosion, fragmentation, bad seed, poor education, bad health, poor communications—if we can tackle these evils, we can soon double and then treble the produce of India's soil and create markets for everything that Indian industry can ever produce.

Industry. Maximum Possible Development

Basic and heavy industries, capitalist and co-operative, must be carefully controlled to eliminate waste and ensure efficiency and proper conditions of working, so that labour and the producer of the raw material may have their full share of the benefits and profits, and nobody's share shall be excessive.

Consumer Industries. It is recognized that many consumer goods must for one reason or another be standardized and mass-produced, but there is a large range of goods which can be produced in small workshops just as well as in big factories. These will be encouraged to the maximum possible, rural and urban alike, and where possible will be co-operatively organized. They already flourish and will be enabled to continue to do so. They will develop initiative and craftsmanship and will absorb the temporary or permanent surplus of agricultural labour far better and in a far healthier environment, both social and hygienic, than large-scale capitalist enterprises.

These advantages will far outweigh the advantages of the slightly cheaper price and slightly better finish of mass-produced goods.

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Health

The health and medical services will be combined and expanded to reach every village and hamlet. Ambulance services will collect the serious cases in several central hospitals in each District, dispensaries will be established in key villages at suitable distances apart, there will be bi-weekly clinics in all but the smallest hamlets, and touring doctors, male and female, will visit every village. Nurses and nurses' *dais* will tour and some will be resident in the villages. Sanitation, water supply, nutrition (particularly of children), dental and eye services will be fully developed in town and country alike and assisted by necessary legislation. Co-operative medical and maternity aid societies and subsidized rural practitioners will be encouraged. Malaria, leprosy and any other diseases capable of organized attack will be vigorously dealt with.

Women's Welfare

The women will be brought up level with the men in education—of their own kind, not a mere copy of men's education—and in everything else. Domestic training will be compulsory at all stages of education; it will be given in every district, and in the village as well as the town. There will be women's welfare services, and co-operative women's institutes, maternity and medical aid, in every town and village. The women will become equal partners with the men in this great enterprise of national development.

Public Servants

A genuine attempt will be made to stop the corruption and disintegration of civil life through bribery; adequate wages and prospects will be given to all public servants

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coming in touch with the people, whether in the village or town itself or at Thanas, Tehsil or other Government Offices. To pay higher wages to the lower ranks of the police¹ and educate and pay the village patwaris properly will cost lakhs but will be worth crores in peace, progress and contentment. The educational system will help greatly by paying far more attention to the teaching of citizenship, a sense of responsibility and high standard of honesty and conduct. Once all the services are properly paid, a vigorous attack will be made on all takers and givers of bribes.

Education

Complete reorganization of education is needed to suit the actual needs and realities of town and village and the social and economic state of the people. Education will be so re-orientated that it will not be regarded as a means to an easy livelihood—to be fed and kept by the country—but as the road to enterprise and skilled work, to progress, better farms, villages, industries and towns, to social services and good citizenship. B.A.s and LL.B.s will be few and far between but there will be plenty of craftsmen, scientists, skilled workers, engineers, chemists and doctors.

As many girls as boys must be educated; all girls to be taught domestic subjects at all stages of education and for all kinds of degrees or diplomas. All boys must be taught one or more handicrafts at all stages of all kinds of education. Proper attention will be given to the health and nutrition of boys and girls at all stages of education. Special schools will be provided for soldiers' daughters as well as for their sons.

¹ This has just been done in the Punjab—to the great credit of the Unionist Ministry.

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Machinery and Administration of the Scheme

Combined operations are required, that is to say, Government and people working in full co-operation. The law will be used in support of those items of the programme that need it, after publicity has softened the defences of conservatism and apathy so that the great majority of people are ready for the proposed change.

For this purpose, from the Governor or Ruler and Ministers to the patwari and constable, all public servants and all non-official privileged classes and recipients of Government favours will learn, practise and preach the programme. There must be schools and courses of instruction for all grades and classes of officials and leaders. India is weak in cash; she must be rich in leadership, in service, in work, in enthusiasm and in co-operative drive.

Power will be acquired by legislation to promote the programme, e.g. to stop erosion, or to grow trees for fuel and timber, to improve conditions of land tenure or labour to ensure sanitation in towns and villages, to enable a clear majority in any town or village to carry out work for its development or improvement without obstruction from minorities. All able-bodied men will have to give six days twice a year (or pay for a substitute) for community work for roads, bunds, drains, soil conservation, etc. These powers will not be applied suddenly or harshly. They will be used in conjunction with the training and publicity described elsewhere so that there will be the maximum of willing co-operation and the minimum of compulsion.

There must be a proper development of publicity services both to 'sell' the development programme to the public and to provide good rural news and entertainment and uplift

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services. Some of the things a publicity service can do to reach the villages are:

- (a) Publish a weekly picture paper for every language-group of villages.
- (b) Establish a touring cinema in each Tehsil.
- (c) Broadcast first-class radio programmes for villagers. Of course, arrangements must be made to put on the market radio sets within the means of individual villagers, and there must be cheap servicing of sets.
- (d) Send out touring dramatic parties.
- (e) Organize shows, melas, tournaments and competitions.
- (f) Produce gramophone records, songs, posters, booklets, pictures and all the other devices of ancient and modern, Eastern and Western, popular public instruction.
- (g) Maintain a service of village guides to take the programme to every village and hamlet and to link the villages with every department of Government.

Every area must have its detailed plan to suit local needs and possibilities—from each Province, Division, and District down to each tehsil, taluk and even village—and every leader and public servant serving in each area will know and work to his blue print.

Self-help and co-operation will be the guiding principles. Nothing will be provided free—every benefit will be contributory to the largest extent possible, in cash and labour. Only the destitute will pay nothing, and for them every effort will be made to put them on their feet again. As far as possible every activity will be co-operatively organized. Villages will be governed by panchayats.

Youth will be organized and trained. Troops of Boy

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Scouts and Girl Guides, and youth clubs of all sorts and for all purposes will be started in towns and villages alike. All school and college students will attend youth camps where they will do useful work, learn citizenship and crafts and be encouraged to play games.

The Government machine will be tuned up and geared to the great enterprise by:

- (a) Proper co-ordination of all departmental work at all levels—at Provincial Headquarters, in Divisions, in Districts and in villages. All departments will preach and practise each other's programme of betterment, will help each other and work together under one central direction at Provincial Headquarters and everywhere else. This is far from being the case at present. Not only do departments often not co-operate with each other but they sometimes work against each other; and much efficiency is lost and development retarded by lack of co-ordination between departments.
- (b) Reorganization of the District work to enable District Officers to pay proper attention to welfare and development, and to tour the villages.
- (c) All the many departmental schemes awaiting funds must be carried out at last. They are trotted out every budget time and put back again for want of money. All departmental activities for the improvement of life and livelihood must be developed to the maximum.

Cost and Finance

Money cannot be spent very quickly at first and it will take time to get things really going. The framework of Government has been so attenuated in the past, the staff so reduced and the social services so starved that it will take

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several years to make the plans, collect the equipment and material, build up and train the necessary staff. The fullest use possible must be made of all ranks of the Army, the moment they become available, to recruit the necessary staff for the expansion of the administrative machine.

The revenues of the Provincial Governments are too inelastic for them to pay the whole cost. If, therefore, the Central Government cannot find the whole amount as a gift, then a loan without interest of whatever proportion it cannot give is suggested, in the hope that the prosperity induced by the programme of development will enable the province to repay it at some future date. Capital outlay of a remunerative kind might be financed by loans in the ordinary way. One great stimulus to provincial development would be the return by the Central Government to the Provinces of all money paid by way of income tax and import duties on development schemes.

The expenditure by the Central Government on Central services—ports, railways, radio, posts, telegraphs, telephones, arterial roads, air services, etc.—is of course quite separate from the Provincial estimates.

Perhaps a sum equal to three or four years' revenue would suffice for the first eight or ten years' work. As a matter of fact, India is better off now than she ever has been before. The Government of India has paid off its sterling debt and has a huge credit in London, the Provincial Governments have surpluses they cannot spend, all taxes and revenues are coming in as never before. Industrialists, craftsmen, farmers, merchants have never been so well off. The soldier will have his deferred pay, furlough pay and any money he has saved at the end of the war, and the Army has its Welfare Fund for the very purpose of helping the demobilized soldier

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to make good as a citizen. India will never again have such a chance of making and carrying out plans of large-scale development.

How soon special finance will cease to be necessary and the movement become self-supporting depends upon the drive and the momentum achieved, and these depend upon the inspiration and the leadership put into the work by Government, its officials and the non-official leaders. If the enthusiasms of the common people, particularly of the younger generation, can be fired, the speed will be accelerated and the cost will obviously be greatly reduced by free labour and services, by fees and contributions, by the spending of the people's own money and savings and by the share of the new wealth created which Government can take as taxation. No one can even guess what could be achieved by an all-out drive for the welfare of the common people by a Government and a body of officials who really believed in what they said and did, and by putting ideals other than merely political before the youth of the country and before an intelligent and active peasant soldiery returning from war with money in their pockets. But we know too well from previous experience what will happen if we sit with folded hands and leave the future to itself.

This scheme of course is pump-priming. Is it justified? What will happen when the money is exhausted? Perhaps there will be more forthcoming. Perhaps the money may never be exhausted; much of the work will strengthen Central and Provincial resources, and the period of intensive productive development may enable money to be found locally: the soldier will be invited to invest his savings in self-improvement of all kinds; all schemes will be self-helping and contributory; doles and alms-giving will be kept down

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to the absolute minimum; five or ten years of increasing well-being may change the whole mentality of the people and the money now spent by both Government and the people in keeping and in breaking the peace, in litigation, in friction, frustration, in waste and extravagance of various kinds may be diverted to development and social improvement.

No one can say what will be the result of a period of intensive beneficent administration with popular co-operation, but we may safely say that at the worst the ex-soldier will be five or ten years older at the end of it and things will at least be far better than if we had merely spent our resources during this period in trying to maintain law and order and leaving the soldiery to shift for themselves; and at any rate there will be far more chance of repaying a productive loan than money spent merely on waging war.

A Short Term Plan

There is bound to be a gap between the end of the war and the time when large-scale planning begins to benefit the common man. This gap must be filled by a general uplift drive—a drive for better seed, consolidation of holdings, manure pits, anti-erosion work, co-operative enterprise, cottage industries, ventilators, chimneys, improved wells, the growing of protective foods, domestic training and welfare work for women, youth movements, organized recreation—all the little things which cost so little but mean so much in improved health, wealth and well-being. This programme will keep everyone happily and profitably busy till the big plans mature and will do more than anything else to keep the people together, to prevent the reaction and disillusionment that is so likely to follow the relaxation of the strain and effort of war, to prevent the

WINNING THE PEACE

ex-soldiers drifting apart, frittering away their savings, and forgetting their comradeship, loyalty and discipline, and it will convince everyone of the goodwill of Government and its desire and capacity to win the peace as well as the war.

Summing Up

It is only the provision of adequate money for equipment which has enabled the Indian soldier to use his magnificent qualities for the winning of the war. The provision of a mere fraction of this money for a carefully planned and executed programme of national development will enable him to divert these qualities to winning the peace, and to become the spearhead of a great advance in culture and civilization. The measure of our plans must be not our bank balance but our needs. Money must not be our master but our servant, for winning the peace just as it is for winning the war.

But there is no time to lose; this great opportunity will never come again. Plans and preparations cannot be made in a day. If they are not ready and already in execution when the enemy finally collapses, we shall go into a flat spin, and having won the war we shall have every chance of losing the peace. India's soldiers are fighting for the United Nations and our difficulties are not due to any fault of ours. But that is no excuse for doing nothing. Our Allies are all making plans for post-war reconstruction. Let us do likewise and win the peace together as we are winning the war together.

The V sign must stand for Vision and Vigour as well as for Victory. No piecemeal plans will help us, nothing but a full 'flat-out' programme will create the momentum which will lift India's standard of living.

WINNING THE PEACE

The New Order in Home and Village

This is the picture of the home and village which our plans are designed to produce.

The village has been 'consolidated', that is to say, the scattered fields of each man's holding have been put together; and so the fields are large, and many of them are fenced; all sloping fields have been terraced and embanked. All water above and below the ground that can be made available is used. The people grow the best crops that land and water allow; the water compartments in the fields are small and water is nowhere wasted. Wherever possible, everyone grows at least some fruit and vegetables for his home, there are good implements and good cattle to be seen, none but 'approved' stud bulls are used, the roads are straight, raised above the level of the fields, passable at all times to wheeled traffic and connected with the nearest metalled roads. The bigger farmers live in pleasant farmsteads on their land. All carts are rubber-tyred, on mass-produced wheels and axles attached to the existing cart bodies.

Round the village itself there are no unnecessary ponds, pits or holes to breed mosquitoes; earth for house repairs comes from specially selected places¹, not from promiscuous diggings anywhere and everywhere. Few, if any, dung-cakes are made; corn is ground by bullock-power and not by women-power; rubbish is removed to properly dug rows of pits, in wheelbarrows and not in baskets carried on heads; there are simple but decent latrine arrangements; many of the streets are paved and drained; well-tops are

¹ These places are usually the ponds which are kept dry, turn and turn about, for this purpose (see *Better Villages*, 3rd ed., p. 41).

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properly constructed and the water is drained away to little gardens; there is a good purdah washing place on the wells for women to wash themselves, their clothes and their children.

The cattle drink from troughs at the well or from a good tank which is filled from the canal or from the jungle. There is a 'footbath' of cement concrete, and when foot-and-mouth disease appears in the neighbourhood it is filled with foot-wash and all cattle are driven through it twice a day. There are organized games, and a recreation room with a small library and some periodicals and good books; and there is a community radio set. There are co-operative societies of many kinds (responsible for recreation, marketing, a store for improved seeds and implements and some cottage industries) and a Branch Post Office. A panchayat administers the village; by a co-operative or other organization medical aid, maternity aid and the services of a trained nurse or *dai* are secured. There are trees in the open spaces and a general air of brightness and cleanliness.

The homes are light and airy, with pictures on the walls as well as other forms of decoration; the walls, beams and atmosphere are not black with smoke. The fireplace is of an improved kind on which several pots can stand, and which does not waste so much fuel as the ordinary *chula*. Every fireplace has a chimney, while milk and other things are kept hot in hay-boxes, not over a slow fire of cow-dung. The yard outside is clean and tidy. There is a patch or two of vegetables and flowers, while if there is room, there are one or more trees, preferably fruit trees or perhaps a grape vine or a papaya. The children are clean, neat, disciplined, healthy and happy; boys and girls go to school; their ears are not drilled with holes—none of them wear any ornaments. Helped by the fruit and vegetables her-

WINNING THE PEACE

goodman grows, the goodwife is able to cook a good balanced diet. She makes and mends the clothes; she knits woolies, she keeps a few simple medicines. She can read and write and has several books upon subjects of general as well as domestic interest. She is a member of a Co-operative Women's Institute. Her clothes are home-made, her ornaments are simple and they are within her means. Her goodman takes an interest in his home and his farm and is never idle; there is always something to be done to improve home, farm or village. He is a member of several co-operative societies for the provision of his various needs and the marketing of his crops, and he has some profitable hobby or sideline for his spare time in which his children give him what help they can. He takes a keen interest, both for himself and his children, in village games and in any other community effort that is going on for the entertainment or improvement of his village. He has a Savings Bank account, or banks with a Co-operative Credit Society. The whole family is properly vaccinated and re-vaccinated at the proper time and they all use mosquito nets; naturally, quinine is among the medicines stocked by the wife.

I defy anyone to say that this is a fantastic or an impossible picture. Most of it is to be found somewhere or other in our villages, although nowhere is it yet all together in one home or village. This is what is meant by a high standard of living and this is what is meant by rural reconstruction. Can it be bettered? And can we accept anything less? This is what I mean when I say we must plan and fight to win the peace.

A HOLY WAR

A SAMPLE DIALOGUE FROM THE AUTHOR'S

Socrates in an Indian Village

SOCRATES went to the chaupāl, as usual, and found it full of ex-officers and ex-soldiers, all smartly got up with uniform and medals, and looking very proud and gay.

SOCRATES: Good morning, gentlemen, how smart you all are today! Do you know what you remind me of most?

EX-OFFICERS: What, Socrates?

SOCRATES: Peacocks sitting on a muck heap.

EX-OFFICERS: You are pretty rude this morning, Socrates. Why are you pleased to make such an insulting comparison, old man?

SOCRATES: Well, you are beautifully dressed and covered with medals, but your village is filthy.

EX-OFFICERS: That is unfortunately true, but anyway you will admit that even your own comparison shows that what you describe is natural.

SOCRATES: Oh, is it? Did the peacocks make the muck heap?

EX-OFFICERS: No.

SOCRATES: And aren't you all responsible for the dirty state of your village?

EX-OFFICERS: We suppose we are, to some extent.

SOCRATES: Anyway, what is happening—is it a wedding or a garden party, or what?

SUBEDAR-MAJOR: Hardly a garden party here, Socrates! We don't keep gardens in villages.

A HOLY WAR

SOCRATES: Then where do your wives take their little babies for air and exercise in the afternoon?

SUBEDAR-MAJOR: Nowhere, of course. What an idea!

SOCRATES: But surely a Subedar-Major's wife is as smart and clean and enlightened as a Subedar-Major? Surely she doesn't live in darkness and squalor, the same as the rest of the village?

SUBEDAR-MAJOR: She lives in just the same way as all the rest of the village women.

SOCRATES: Then all the training and uplift of army life was wasted on you, Subedar-Major Sahib, if you are content to drop back into the old ways, shed your enlightenment with your uniform, and forget all you ever learnt?

SUBEDAR-MAJOR: What would you have us do, Socrates? You've always got some strange new fashions for us.

SOCRATES: Why, I should expect you ex-officers to bring back with you a little light and culture into the villages, to make your houses models of comfort and hygiene, and make gardens for your wives and children to enjoy.

SUBEDAR-MAJOR: That sounds attractive, Socrates, and we have the means, but we seem unable to combine and no one will take the lead.

SOCRATES: The old story, I fear. We can always combine for evil, and there are always leaders to come forward to lead us to mischief, but we can never combine for good, and no leaders will ever come forward to set an example in good things.

SUBEDAR-MAJOR: That is so, Socrates, and always has been.

SOCRATES: Then we must try and alter it. Let's begin by starting a sort of ex-officers' club in our village, put

A HOLY WAR

together a little money, and make a small garden for the women and children to sit in; and let us find out and practise all the various ways there are of improving village life. We are not poor, and many of the new things will bring in money too, such as good seed, iron ploughs, and Persian wheels. The other things that reduce dirt and disease will cost nothing, and, by saving the time now wasted in bed with fever, we may save money too. Anyway, let's have a try.

SUBEDAR-MAJOR: Very well, Socrates; we will make a start and see if we cannot lead the village in peace as we led our braves in war.

*Perambur &
Anand
Raj
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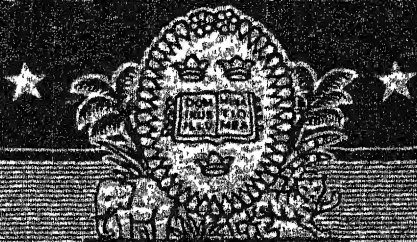
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SIAM

SIR JOSIAH CROSBY

OXFORD PAMPHLETS
ON INDIAN AFFAIRS





OXFORD PAMPHLETS ON INDIAN AFFAIRS

No. 26

SIAM

BY

SIR JOSIAH CROSBY



HUMPHREY MILFORD
OXFORD UNIVERSITY PRESS.

SIAM, with a population of 15 millions and an area rather less than that of Burma, occupies a central position among the countries of south-eastern Asia and is the first of them to have attained complete national independence. Treaties abolishing the last vestiges of extritoriality were negotiated in 1937 and 1938. Most of the people are peasant farmers, and there is little industry or commerce. The Constitution drawn up after the bloodless revolution of 1932 established a monarchy on something like the British model but, in the absence of the boy king, the soldiers and sailors gradually assumed more powers, and Siam has been under what is virtually the military dictatorship of Field-Marshal Luang Pibul Songgram since 1938. When the Japanese domination has been ended, it is to be hoped that there will be a return to the constitutional form of government which began so promisingly.

Sir Josiah Crosby, K.C.M.G., K.B.E., C.I.E., went to Siam as a Student Interpreter in 1904, and remained there until 1917. After serving for over ten years as Consul-General at Batavia, in the Netherlands East Indies, he returned to Siam in the capacity of British Minister in 1934. He was interned at Bangkok in December 1941, and left for England on an exchange-ship in 1942. In all he has spent close upon a quarter of a century in Siam.

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SIAM¹

The Country

SIAM lies approximately between the 6th and the 21st degrees of North latitude and between the 97th and 106th degrees of East longitude. It is bounded on the north by the British Shan States and French Indo-China, on the east by French Indo-China and on the west by Burma and Malaya; on the south it looks towards the Gulf of Siam, which opens into the China Sea. The area of the country is just under 200,000 square miles, which is rather less than that of Burma and is roughly equivalent to that of England and France combined. The population amounts to about 15,000,000 souls,² consisting for much the greater part of Siamese (or, in the east, of Laos, who are their kinsmen). There is a small Malay population in the southern provinces, and there are also a large number of

¹ A year or two ago the Government of Luang Pibul Songgram decided that in future the term Siam should be dropped and replaced by 'Thailand'. In this pamphlet the old and more familiar name Siam has been retained, which has no suggestion of chauvinism attached to it.

² These figures as to areas and population relate to the Kingdom of Siam as constituted up to the end of 1940. They do not take into account territory measuring about 25,000 square miles and including some hundreds of thousands of inhabitants, mostly situated in Cambodia, which the French Government installed at Vichy was compelled, early in 1941, to yield up to Siam under pressure, disguised in the form of mediation, from Japan. It remains to be seen whether, after the close of the present war, Siam will be permitted to retain these additions to her territory. Equally, the above-mentioned figures leave out of account the following territories comprised within the British Empire which the Japanese, after their entry into the war against the United Nations, saw fit to assign to Siam: the four Malay States of Kedah, Perlis, Kelantan and Trengganu, with a combined area of nearly 15,000 square miles and a combined population of just over one million; also the two small and sparsely populated British Shan States of Kengtung and Mongpan.

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persons of Chinese race, amounting in all to some three millions, scattered throughout the kingdom, but the great majority of these were born in Siam.

Siam is traversed by one of the great watercourses of south-east Asia, namely, the River Menam, near the mouth of which is situated Bangkok, the capital; which has a population of about 900,000 and is the only city of any considerable size. The central portion of the country is flat, consisting partly of alluvial soil, and is devoted to agriculture. Further north the land becomes hilly, and in parts mountainous, with pastures and forests that permit of animal husbandry and of the exploitation of forest produce. The plateau to the east, in the region of Korat, which is poorly watered, is devoid of vegetation except for the pasturage which it affords for the raising of cattle. The southern provinces of Siam run down through the Malay Peninsula to well south of the Isthmus of Kra, and have for their backbone the mountain range which comes down from the north in the neighbourhood of the frontier dividing Siam from Burma.

The climate of Siam is tropical with a high humidity. In the central plain, during the hot and rainy season from April to October, the temperature in the shade seldom rises above 98° Fahrenheit or falls below 79°. The dry season lasts from November to March and includes a comparatively cool period in December and January, when the temperature may drop to as low as 57°. Northern Siam, which is cut off from the sea breezes, can be slightly hotter than the central plain by day and, because of its greater altitude, is often cooler by night. The arid eastern plateau is excluded by surrounding hills from cooling winds and, owing to excessive radiation, shows greater differences of temperature than any other part of the country. The most equable climate is to be found in southern, or peninsular, Siam. On the other hand, this portion of the kingdom has the greatest rainfall, amounting to as much as

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100 inches in the year. Northern Siam has about 60 inches, the central plain 50 inches or less, and eastern Siam the lowest of all.

It is the south-west monsoon which brings the rains; it lasts from May to October. The north-east monsoon (November to April) prevails during the dry weather.

With the exception of the eastern region, Siam is well supplied with rivers, whilst in the neighbourhood of Bangkok there is an extensive system of canals. It was along these waterways that, before the advent of the railroad and of modern highways, the life of the people was chiefly concentrated.

Siam is mainly an agricultural country, its staple product and its principal article of export being rice. A certain amount of rubber is also grown in the south and teak is extracted from the forests in the north. In recent years a flourishing tin-mining industry has come into being in the southern provinces, and Siam is now capable of furnishing an appreciable quantity of the world's consumption of tin.

The People and Their Origins

The Siamese are the most numerous among a distinctive group of peoples known as the Thai group, to which belong also the Shans and the Laos. The Shans are the inhabitants of a number of small States situated to the east of Burma and to the north-west of Siam, most of which are included within the framework of the British Empire, though a few of them lie within the borders of the Republic of China. The Laos are to be found in eastern Siam and in that portion of French Indo-China which consists of the Protectorate known in French as *Le Laos* and which is situated on the eastern bank of the upper portion of the River Mekong. The inhabitants of the Siamese northern provinces are also sometimes called Laos. All of these peoples—the Siamese, Shans and Laos—are derived from one common racial stock and speak different varieties of

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what must have been formerly one and the same language. The latest researches go to show that the cradle of the Thai family of peoples was probably in the province of Hunan, in central China. Although the Thais all of them speak, like the Chinese, a monosyllabic tongue with a number of tones to differentiate between words otherwise having the same sound, and although, again like the Chinese, they are racially of Mongoloid type, they form, nevertheless, both linguistically and in other respects a separate ethnical group of their own.

Migrations of Thais southwards and westwards from their original homes in China must have begun in quite early times, well before the establishment of the Thai kingdom of Nanchao in south-west Yunnan in the seventh or eighth century of the Christian era. (This kingdom was suppressed by the Mongol Emperor of China, Kublai Khan, in A.D. 1287.) Pressure from the Chinese masters of the surrounding country was one of the causes leading to these migrations, but another contributing factor is doubtless to be sought in the lure of the milder and more fertile regions lying to the south. However that may be, the fact remains that from an early date and for centuries afterwards there was a flow of Thai immigrants down the valleys of the Irrawaddy, the Salween and Mekong Rivers which brought them into what are now Burma or the Shan States, Siam and French Indo-China.

When the Thais first penetrated into what is the present kingdom of Siam, they found a good part of the country in the possession of the Mons, an Austro-asiatic people which had already been civilized from India and was entrenched in the Pegu district of Lower Burma. In course of time the Mons were gradually deprived of their hold over central and southern Siam by the Khmers, or Cambodians, another Austro-asiatic people settled to the east, who had succeeded, at the beginning of the ninth century of the Christian era, in creating a powerful Empire, the capital of which came to be established

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at Angkor. The Khmers, equally with the Mons, had acquired their culture and religion from India, and it was owing to their contacts with these two peoples that the Thai immigrants into the present-day Siam derived in their turn their own religion and culture. Hence it comes about that to this day the Siamese, and together with them the Shans and Laos, profess the Buddhist faith and that their old system of customary law, their art and even their respective scripts betray an unmistakably Indian origin.

The Thai immigrants into Siam, who had dwelt at first under the domination of the Mons and, subsequently, of the Khmers, ultimately rebelled, defeated the latter and gained, piecemeal, their independence.

Needless to say, the Siamese of the present time are by no means of unmixed Thai stock. In the course of their history the Thais must have been affected by their intercourse with Chinese and Burmese in the north and west and by their contacts with the Mons and Khmers in the south and east. Generally speaking, the Thai physical type becomes less pure as one goes further south. But the Siamese cling tenaciously to their Thai traditions and are proud of their Thai ancestry, which forms, when all is said and done, the principal element in their make-up. In quite modern times there has been a considerable mixture through intermarriage between Chinese immigrants and Siamese women.

Historical

The revolt of the scattered Thai groups in Siam began, in the thirteenth century of the Christian era, with the establishment of the independent Thai kingdom of Sukhothai, in the north of the central portion of Siam. A somewhat legendary personage, Phra Ruang, is said to have become the first ruler of this state in A.D. 1238 and to have founded a dynasty. His son and the second of his successors, King Ram Khamheng, is one of

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the greatest figures in Siamese history. He came to the throne in 1275 and extended his rule over the greater part of present-day Siam, as well as over Luang Prabang (on the east bank of the River Mekong) and over portions of Lower Burma. After his death about the year 1317 the kingdom of Sukhothai declined rapidly. The King of Pegu renounced his allegiance and at the same time a rival Thai power grew up in the shape of the principality of U Thong, near the modern town of Suphan, in south central Siam. In 1350 an energetic ruler of this state founded a city at Ayuthia, on the River Menam, some 45 miles above the present city of Bangkok, where he proclaimed himself king, afterwards becoming known in history as King Rama 'Thibodi I. This marked the beginning of the modern kingdom of Siam, of which Ayuthia continued to be the capital until it was destroyed by the Burmese in 1767. The kings of Ayuthia extended their sway over the whole of the country, the kingdom of Sukhothai becoming their vassal after having existed as an independent state for 132 years. In course of time there ceased to be even vassal kings of Sukhothai, which became absorbed as a province in the realm of Ayuthia. Finally, in 1431, the armies of Ayuthia destroyed the Khmer capital at Angkor, Cambodia descending thereafter to the position of a vassal state of Siam, though the suzerainty over her was subsequently disputed by the Emperors of Annam.

For three hundred years or more following on the foundation of Ayuthia in 1350 the history of Siam is bound up with that kingdom, which gradually consolidated its power until it became one of the most influential of all the states in south-eastern Asia. It was during this time that the legal, administrative and social systems of the Siamese were crystallized in a form which lasted until the close of the nineteenth century and which has survived in some respects to the present time. This same period saw, too, Siam's first contacts with Western countries. It was by no means a period of unbroken tranquillity, for it was

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marked at times by palace revolutions and changes of dynasty and, in addition to these internal disturbances, there were constant wars with neighbouring territories. But it was, nevertheless, a time of consolidation and expansion which has left its mark upon the Siamese people for good and all.

The external wars just mentioned were waged sometimes with Cambodia, which continued to give trouble for long after she had become a vassal of Siam, sometimes with the Thai kingdom of Chiengmai in northern Siam and, above all, with the adjacent kingdom of Burma, Siam's traditional and greatest enemy.

Already in the days of King Rama Thibodi I the rule of Ayuthia was extended so as to include southern Siam, Tenasserim and Tavoy (in Lower Burma) and even Malacca. Although the southern portion of the Malay Peninsula never came to form an integral part of the kingdom of Siam, Siamese claims to exercise suzerainty over certain states in that region were maintained until the beginning of the present century. Tenasserim and other parts of Lower Burma, and also Chiengmai, formed a battle-ground for supremacy during most of this period between the kings of Burma and Ayuthia.

In 1568 the Burmese took Ayuthia by storm and Siam then passed into a state of vassalage to Burma for the space of fifteen years. She regained her independence through the exertions of King Naresuen, the most heroic of her monarchs, who carried the war into Burma and subjected Pegu to his rule. He died in 1605.

The Portuguese were the first Europeans to establish contact with Siam, which they did at the beginning of the sixteenth century. The seventeenth century witnessed the arrival of the Dutch and the English, both of whom, like the Portuguese, had come for purposes of trade. Factories were maintained by these Western merchants at Ayuthia, and there were also a number of immigrants from Japan, some of whom are said to have been

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converts to Christianity escaping from religious persecution in their own country.

For a brief while during the reign (1657-88) of King Narai, who ranks among the most enlightened of Siamese rulers, the French succeeded in acquiring an influential position in Siam. They did this with the help of a Greek adventurer named Constantine Phaulkon, who had risen to an office of the highest power at Ayuthia and had embraced the Roman Catholic religion. He wished to cultivate close relations with King Louis XIV of France, both in order to counterbalance the growing influence of the Dutch and because of his religious sympathies, for King Louis entertained the hope (which was doomed to disappointment) that King Narai would be converted to Christianity by the French Roman Catholic missionaries who were already establishing themselves in the country. Embassies were exchanged between the French and Siamese Courts, and a second embassy from France was accompanied by some hundreds of French soldiers, a circumstance which caused alarm among the Siamese notables surrounding King Narai, who suspected the French of harbouring military designs. On the death of King Narai at this moment the throne was seized by one of his generals, by whose orders Constantine Phaulkon was arrested and executed and by whom the French troops were subsequently compelled to leave Siamese territory. The Siamese reaction to this threatened intermeddling in local affairs by an occidental Power was such that for an ensuing period of nearly 150 years Siam cut herself off from contacts with the West.

In the course of the seventeenth century Pegu was lost to Siam, but she continued in the possession of Tenasserim.

In the latter half of the eighteenth century war broke out again with Burma, and in 1767 the Burmese King Alaungpya, after having conquered Chiengmai and Luang Prabang and recovered Tavoy, took the city of Ayuthia by storm after a long siege

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and destroyed it utterly. He spared neither its religious edifices nor its irreplaceable official documents. Siam was now annexed to Burma; the king of Ayuthia escaped to the jungle, where he perished miserably, and with the fall of Ayuthia another chapter in the history of Siam came to a close.

After Ayuthia had fallen, the fortunes of Siam were retrieved by an energetic military leader named Phya Tak Sin, who rallied round him a band of followers and, after the withdrawal of the main Burmese forces, succeeded in restoring the independence of the country and in making himself king. He set up his capital at Dhonburi (now the suburb of Bangkok situated on the west bank of the River Menam) in 1768. Phya Tak Sin later on became insane and was put to death, the crown being assumed in 1782 by one of his generals, who was then known under the name of Chao Phya Chakkri and who came to be styled King Phra Buddha Yot Fa Chulalok. He was the founder of the Chakkri dynasty, the members of which have continued to occupy the throne of Siam up to the present time. The seat of government was now transferred to the east bank of the River Menam, that is to say, to the site of the present city of Bangkok proper.

The reign (1851-68) of the fourth monarch of the Chakkri dynasty, King Mongkut, marked a turning-point in the history of Siam by reason of the conclusion, in 1855, of a Treaty of Friendship and Commerce with Great Britain, which first threw the country really open to foreign trade and enterprise. Under this agreement a British Consul was appointed to reside at Bangkok. Similar Treaties followed soon afterwards with practically all of the European Powers and with the United States of America and, finally, in 1898, with Japan. Most of the foreign Consulates originally established at Bangkok developed, as time went on, into Legations; in 1941 Japan went a step further and raised her Legation to the status of an Embassy.

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King Mongkut's son, King Chulalongkorn (1868-1910), was no less sagacious than his father and was no less anxious to come to terms with Western civilization and to reorganize the administration of his country on modern lines. These two sovereigns are to be counted among the greatest of Siam's rulers.

King Chulalongkorn's son, King Vajiravudh (who subsequently took the name of King Rama VI), reigned from 1910 to 1925; it was he who declared war on Germany and brought Siam into the ranks of the Allied Nations in the course of the world war of 1914-18. On his death he was succeeded by his younger brother King Prajadhipok, who abdicated in 1935 and was followed by his nephew, the present monarch, King Ananda Mahidol, who is still a minor and is being educated in Switzerland. He was in that country when the Government at Bangkok associated itself with the cause of Japan and declared war in his name, in January 1942, upon Britain and the United States.

The Revolution of 1932

On 24 June 1932 a momentous event occurred at Bangkok in the shape of a bloodless revolution which was staged successfully by a group of Siamese intellectuals, headed by a young lawyer named Luang Pradist Manudharm, in association with a number of officers of the Army and Navy. The object of the conspirators was to put an end to the system of government by an absolute monarch which had been the only one known in Siam up to then, and to substitute for it a constitutional form of administration on democratic lines. As a result of this movement King Prajadhipok was compelled to promulgate a Constitution, in virtue of which a single-chamber Legislature was created, whilst at the same time a Cabinet, or Council of Ministers, was set up which was to be responsible to the Legislature and at the head of which was to be a Prime Minister. One half of the members of the Legislature were to be

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elected by popular vote, the other half being nominated by the Crown in theory, but in practice by the Government of the day. Although effective power in the country had now passed to the promoters of the revolution, who numbered no more than about ninety persons, it was not one of themselves whom they chose to be Siam's first Prime Minister, but an experienced lawyer named Phya Manopakorn, who had been filling the position of Chief Judge of the Court of Appeal at Bangkok. It was he who gave definite shape to the new Constitution, but he fell out soon afterwards with the more radically minded among his Ministers and among the members of the Legislature (or Assembly of the People's Representatives, as it is called), and in April 1933 he suspended the Constitution. In the following month of June, however, he was expelled from the country by the majority of the instigators of the revolution, who restored the Constitution and thereafter proceeded to take the administration more firmly into their own hands. A new Government was consequently formed under Phya Phahol Pholphayuha, who had been one of the principal military leaders among the conspirators. In October 1933, a counter-revolution was attempted by General Prince Bovoraddej, a cousin of the king, but it was suppressed by the Army, which stood by the new regime, under the leadership of Colonel (now Field-Marshal) Luang Pibul Songgram, who thereby came into prominence as the most active among the chiefs of the military section of those who had planned the original revolution. In spite of sundry efforts by supporters of the old regime to upset the new constitutional arrangements—efforts which did not stop short of attempts at assassination—the promoters of the rising of June 1932 were able to maintain themselves in power. At the close of 1938 Phya Phahol retired from public life and was succeeded as Prime Minister by Luang Pibul Songgram, who still holds that office. The significance of this change will be explained in a later section.

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It will suffice to say here that the instigators of the revolution did not aim at setting up a Republic and that they wished to establish a constitutional monarchy on something like the British model.

In the meantime King Prajadhipok had left Siam for England for reasons of health at the beginning of 1934, never, as it proved in the event, to return. A difference of opinion with his Ministers led to his abdication a little more than a year later and he died in England in May 1941.

Social Conditions

The majority of the Siamese are peasant cultivators, with the result that they constitute a rural more than an urban population. The standard of living among them may not be very high, but their needs (outside the towns, at any rate) are few, the country is fertile, and acute economic distress among them is virtually unknown. In recent years, however, there has been a regrettable tendency for peasant holdings of land to fall into the hands of moneylenders or middlemen, who advance funds to the improvident cultivator and so acquire a mortgage on his rice-fields. The lot of the peasant has thus deteriorated considerably of late and the situation in this respect has been a cause of no little anxiety to the Siamese Government, which is seeking to remedy it by the remission of taxation and by the institution of co-operative societies and agricultural credit banks.

The average Siamese has shown little aptitude hitherto for commerce. Hence it is that the trade of the country, both internal and external, has fallen into foreign hands—European and American, Chinese and Indian, but above all Chinese. Even the majority of small shopkeepers in all but the most remote districts are Chinese. In order to rectify this state of affairs, the Siamese Government has now adopted a policy of economic nationalism and is doing its best in various ways to encourage

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the people to take a greater share in the nation's commerce. The future will show what measure of success these efforts achieve.

Most of the manual labour, apart from farming, has in the past been performed by foreigners; for example, in the south the bulk of the work on the tin-mines is done by Chinese, whilst in the teak forests of the north the labour force is recruited largely from hill tribes in Burma and French Indo-China. Siamese manual labour is, however, beginning to be seen at Bangkok and in the adjacent provinces.

Between the royal family and a small aristocracy on the one hand and the great mass of the peasant cultivators and workers on the other comes a small middle class, consisting of civil servants, officers of the Army and Navy and a few professional men. It is from this restricted class (aside from the royal family and the aristocracy) that the intelligentsia of the country is drawn.

Administration

According to the Constitution of Siam the sovereign power emanates from the Siamese nation. The king, who is the head of the nation, exercises this power in conformity with the provisions of the Constitution; his person is sacred and inviolable; he must profess the Buddhist faith; he is the head of the Siamese Forces; he exercises the legislative power by and with the consent of the Assembly of the People's Representatives; he exercises the executive power through the Council of Ministers; and he exercises the judicial power through the Courts duly established by law. In other words, he is a strictly constitutional monarch with little or no power vested in him directly.

The Constitution lays it down that the members of the People's Assembly are to be elected for a period of four years, though the king has the prerogative of dissolving the Assembly in order that fresh elections may be held. The Constitution

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stipulates further that the qualifications of the electors and the number of members shall be in accordance with the provisions of the electoral law. A transitory provision laid it down that, until the time when the people who are entitled to vote for the candidates for the Assembly shall have passed their examination in primary education in excess of half of their total number, and at the latest not more than ten years after the coming into force of the Constitution in its first provisional form in June 1932, the People's Assembly should be composed of two categories of members, namely, members of the first category who are elected by the people under terms of the electoral law, and members of the second category who are appointed by the king. Under this provision all of the members of the Assembly should have been chosen by popular election after June 1942, but, when the time for this sweeping change was approaching, the Assembly decided that it should be postponed for a further period of ten years in view of the disturbed world conditions then prevailing. In 1941 there were ninety members in each category. The first electoral law arranged for the election of members by a system of electoral colleges, but a second law has introduced the system of direct voting. There is now universal adult suffrage; both men and women have the vote and there is no test of literacy; members of both sexes are eligible for seats in the Assembly.

Under the terms of the Constitution the Council of Ministers must be composed of one President (i.e. the Prime Minister) with from 14 to 24 other members. Of these the President and 14 other State Councillors must be members of the People's Assembly. The Council of Ministers is charged with the duty of conducting the government of the state.

The Governments set up under the new regime were not slow in effecting certain reforms in the local administration of the country. Under the system now in force the kingdom is divided into 70 *changvats* or counties, each of which is again

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divided into districts, the latter in their turn being split up into smaller areas, and finally into villages which are under an elected headman. Each *changvat* is administered by a committee composed of the provincial commissioner (who is the head of the *changvat*), by the heads of districts and by the chief representatives of the various Government services. In addition to such a committee, every *changvat* has a council, half of the members of which are for the present appointed by the above-mentioned committee and the other half are elected by the local population. Municipal councils have also been created in the larger centres (towns) and are made up of councillors appointed by the Government.

Although the new regime was inaugurated under the sign of democracy, it was from the first careful to refrain from going too far in the direction of giving full liberty to a population which upon the whole is still quite undeveloped politically. Thus it happens that the formation of political parties is forbidden for the time being and that there is a rigid censorship of Siam's youthful Press.

The Constitution provides that Courts of Justice can be established only by means of a law and that judges are independent in holding trials and in giving judgement according to law. There are district courts of first instance in which the majority of civil and criminal cases are heard, with the right of appeal to *changvat* courts, which also exercise original jurisdiction in cases of a more important nature. Above these again is the Court of Appeal at Bangkok, whilst the highest tribunal of all is the Dika Court, to which appeals may lie on points of law. The codification of Siamese civil and criminal law upon modern principles has lately been completed by a committee of experts appointed for the purpose. The system of extraterritoriality was at first applied in full force to the nationals of the foreign Treaty Powers residing in Siam under the agreements of 1855 and following years, but

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this system was gradually diluted in course of time by fresh international instruments under which the Treaty nationals became justiciable to the Siamese courts, with the safeguard that in certain cases there should be a European judge or legal adviser upon the bench. But even this tempered form of extritoriality was abolished in 1937 and 1938 and the jurisdiction of the Siamese tribunals is now completely unfettered.

It may be added here that, from the time of King Mongkut and almost up to the present day, it was the practice of the Siamese Government to engage numerous foreign advisers and experts to assist in the administration of the country. In general this system worked very well and helped Siam to convert herself into a prosperous and reasonably well-governed state. Latterly, however, it has become the tendency of the Siamese authorities to employ no fresh advisers and to rely less and less upon the counsel of those who are still in their service.

Finance

The Siamese unit of currency, the tical or *baht*, was formerly linked to sterling at the rate of 11 to the £, but in 1942, after Siam's entry into the present war on the side of Japan, it was based on the yen at a rate very disadvantageous to the Siamese merchant and with results that were bound to be disastrous to the national economy.

The following figures are in respect of the twelve months from 1 April 1938 to 31 March 1939, which was the last normal year before the general upset in world conditions due to the outbreak of war in Europe in September 1939. The estimated revenue was put at just over 109,000,000 ticals, or approximately £10,000,000, whilst expenditure out of revenue was assessed at an almost identical figure. In addition there was to be a capital expenditure of over 22,000,000 ticals (£2,000,000) for economic development, of which 9,000,000 ticals was to be raised by an internal loan, the balance

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coming from the Treasury Reserve. The chief sources of revenue were customs and excise duties, the opium monopoly, the royalty on tin, the land tax and the income tax. Of the estimates for expenditure the largest was in respect of the Ministry of Defence, next in order of magnitude coming the grants for the Ministry of the Interior, the Ministry of Public Instruction and the Ministry of Economic Affairs. Under the heading of capital expenditure the largest grant was for the construction of highways.

At the end of July 1941, the external national debt stood at just over £4,000,000, all of which was held in London, and there was in addition a small internal debt. Up to the outbreak of war in the Far East the financial condition of Siam was a highly favourable one. Her public indebtedness was small and, almost alone among the countries of the world, she had never once defaulted in her obligations towards her foreign creditors. Moreover, the currency note issue was in a thoroughly sound state and was more than amply covered. Needless to say, the Far Eastern war and Siam's participation in it against the United Nations has put an end to this highly satisfactory condition of affairs; one factor contributing to the dilemma in which Siam now finds herself is the circumstance that the bulk of her monetary holdings abroad is in England. It amounts to considerably more than the total of her foreign borrowings.

A financial reform which took effect from 1 April 1939 had for its object the lightening of the burden of taxation on the poorer classes and resulted in the abolition of the capitation tax payable by every male and of the tax on rice-land. It was hoped to make up the deficit so caused by the operation of a new Customs tariff substituting specific for *ad valorem* duties as well as by an increase of indirect taxation.

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Commerce and Industry

In normal times the commerce of Siam shows a consistently favourable trade balance; that is to say, the value of exports is usually in excess of the value of imports. On the other hand, remittances abroad, chiefly on account of the dispatch to other countries of earnings accruing to foreigners (and more especially to Chinese) tend to make the net financial balance more equal.

The year 1938-9 was abnormal on account of the exportation of an unusually large amount of bullion. If we take the year 1937-8 as a more representative one, we find that exports from Siam were valued at over 169,000,000 ticals (more than £15,000,000), whilst imports amounted to nearly 112,000,000 ticals (over £10,000,000). Of the total value of exports 45.5 per cent represented rice, 22.1 per cent tin, 13.4 per cent rubber and 6.1 per cent teak and other woods. The British Empire took 39 per cent of the total exports and Japan only 3 per cent. The principal articles imported were, in order of value, textiles, foodstuffs, metal manufactures and machinery. Of the total imports the British Empire provided approximately 34.7 per cent (the United Kingdom 12.23 per cent) and Japan 20.2 per cent. Germany accounted for 6.23 per cent and the U.S.A. for 5.04 per cent. The figure of Japanese importations from Siam was thus very small in comparison with the Japanese exports to that country in 1937-8, but the balance came to be redressed to a large extent in succeeding years, when Japan, owing to the war in China and to crop failures at home, suddenly began to import great quantities of rice from Bangkok. The last few years have witnessed the rise of Japan to the second place in the import market of Siam after the British Empire, and to the first place if individual countries are considered. This change has been most noticeable in the market for textiles, which European countries (and particularly the United Kingdom) used to dominate, but which Japan has all but monopolized since about 1934.

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In 1937-8 India sent goods to Siam valued at about 4,400,000 ticals (£400,000), consisting as to more than one half of gunny bags, and also of a certain amount of cotton yarn and textile manufactures. Exports from Siam to India in the same year were valued at over 2,000,000 ticals (less than £200,000) and consisted for the greater part of rice; there was also a small quantity of teak.

Apart from the mining of tin, the extraction of teak and the milling of rice, Siam possesses no industries of any importance, but the Government has lately set up a paper factory, two sugar factories and a factory for the weaving of cotton cloth. The Government is also endeavouring to supplement the cultivation of rice by encouraging the planting of cotton, tobacco and soya beans.

The capital required for the operation of the larger tin-mines has been provided almost exclusively from the United Kingdom and Australia. United Kingdom firms have also been the principal exploiters of the teak forests in the past, though the Government intends to take this industry into its own hands in future. The rice mills are to be found for the greater part at Bangkok and are mostly operated by Chinese, but here again the Government is gaining control over the industry.

As has been said in a previous section, the commerce of Siam is still mostly in the hands of foreigners, the Siamese themselves having displayed little aptitude for trade hitherto.

Communications

In Siam the railways (like the posts, the telegraphs and the telephones) are owned and operated by the state. Shortly before the outbreak of war in the Far East the Siamese railway system comprised a network of approximately 2,000 miles and was divided into four main trunk lines, all of them based on Bangkok, as follows: (1) The southern line linking Bangkok with Penang and Singapore; (2) the northern line with its

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northern terminus at Chiangmai and with a good highway leading from Nakhon Lampang as far as the frontier of the British Shan State of Kengtung; (3) the short eastern line running from Bangkok to Aranya Pradesa, close to the frontier of Cambodia; and (4) the north-eastern line, which bifurcates at Korat, whence it runs due east to Ubol, near the frontier with French Indo-China, and also in a northerly direction to Khon Kaen, from which latter place it was to be extended to Nong Khai and Nakhon Panom, two places on the same frontier, situated on the west bank of the Mekong River. The eastern line was subsequently extended to a point actually on the Cambodian frontier with a view to its being carried on for a further distance of 36 miles to Mongkol Borey, in Cambodia. Railway connexion between Siam and Burma via Tavoy had formed a topic of discussion for many years, but had never been realized. The Japanese, since they overran Siam at the close of 1941, have actually put this scheme into execution by constructing a line of 212 miles from Ban Pong (on the Siamese southern railway) across the Burma frontier to Thanbyuzayat, some miles south of Moulmein. The Japanese have also constructed a railway across the Kra Isthmus from Chum Porn to Ranawng.

The Siamese railway system will form a vital link in any future scheme for railroad connexion between China and India via French Indo-China, Siam and Burma.

Until quite recently Siam possessed very few good highways indeed, road construction having been neglected for fear of competition with the railway. This short-sighted view has, however, been abandoned and the Government has now embarked upon a vigorous policy of road-making, though in 1941 it was still impossible to travel very far from the capital by highway in any direction. In 1936-7 a five-year programme of construction was drawn up, involving an estimated expenditure of about £3,000,000.

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Before the coming of the railway, the rivers and canals of Siam used to afford almost the only means of transportation. A considerable amount of traffic still passes up and down the River Menam between Bangkok and Paknampho, 160 miles to the north. There is also much traffic along the canals in the neighbourhood of Bangkok.

In 1937-8 British and Norwegian shipping shared the leading place as regards vessels visiting Bangkok, which is the only port of any size. Japan, Holland and Denmark came next in order of tonnage. The Siamese flag made a poor showing, but the situation in this respect improved somewhat in subsequent years. Before the beginning of the Far Eastern war the Siamese Government was occupying itself with a scheme for the improvement of the port of Bangkok.

Bangkok constitutes a centre of much importance for connexion by air between Europe and the Far East. In 1941, British, Dutch and French air lines were operating via Bangkok and, at the very end, a Japanese line as well. There is a Siamese company which maintains internal services by air in certain parts of the country.

Religion, Education and Public Health

Buddhism in its southern form (known as the Hinayana or Lesser Vehicle) is the state religion of Siam, although freedom of religious belief is accorded to all under the terms of the Constitution. The principal ecclesiastical dignitaries hold patents of appointment from the Crown, and the administration of church lands and revenues is subject to control by the Government.

The new regime set up in 1932 deserves praise for its efforts to promote popular education. In 1938-9 a grant of over 14,000,000 ticals (about £1,300,000) was assigned to the Ministry of Public Instruction; this figure represented approximately 13 per cent of the total national income and

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showed that expenditure on education had been quadrupled since 1932. The census of 1937 indicated a literacy of 31.1 per cent among the population (47 per cent for males and 14.9 for females). Primary education between the ages of 7 and 14 became compulsory in certain parts of the country in 1921 and this enactment was made applicable to the whole kingdom in 1934. The number of schools has been increased, efforts are being made to improve the standard of education and the Government has turned its particular attention of late to the creation of more schools for vocational training. Co-education of the two sexes is the rule in the case of over 90 per cent of students in primary schools, about 80 per cent of which are still situated on the premises of Buddhist temples. Co-education is also the rule in the universities, but not in the secondary schools. In 1937 between one-third and one-half of the children of school age were actually attending school; of these over nine-tenths were in the primary schools and three-quarters in the two lowest grades. The primary school teachers are still, unfortunately, poorly equipped and badly paid.

In addition to the many Government schools there are a number of private schools, some of which receive grants from the Government.

Bangkok boasts of two universities, namely, the Chulalongkorn University and the University of Moral and Political Sciences; the latter serves chiefly as a law school.

For many years past it has been the custom among the Siamese to send a number of students for their education to Europe or the United States, and latterly to Japan and to the Philippine Islands as well. The majority of these students hold scholarships from the Government, which it has now become the practice to award only to students who have already graduated at one or other of the two universities established at Bangkok. In 1941 there were about 500 Siamese students receiving education abroad.

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Defence

Compulsory military service for males with the Army, Navy or Police has been in force in Siam since 1903; not everyone is called up, however, recourse being had to a system of selection by lot. The period of service is for two years.

In the Budget estimates for the year 1938-9 the assignment to the Ministry of Defence amounted to 27,000,000 ticals (approximately £2,500,000) and represented one-quarter of the estimated revenue of the country for that year. The similar percentage was to become still higher later on, and this relatively heavy expenditure on the defence establishment constitutes inevitably a crushing burden on a small Power like Siam. Increased expenditure on national defence has, however, characterized the new regime since its inauguration, and this has been particularly true since the assumption of the office of Prime Minister at the close of 1938 by the military leader, Field-Marshal Luang Pibul Songgram.

On a peace footing the Siamese Army used to number about 40,000 men, although, if there had been a general mobilization, this figure could have been increased to something like 100,000 men, by no means all of whom, however, would have been adequately equipped. After Siam had allied herself with Japan in the prosecution of the present war, the Army was, doubtless, augmented substantially.

The Navy, which in 1932 was composed entirely of obsolete or obsolescent vessels, has been almost completely modernized under the new regime. In 1940 it consisted of a gunboat flotilla of 4 vessels, a sloop group of 3 vessels, a destroyer group consisting of one old vessel purchased years before in England, a torpedo boat group of 9 vessels, a small torpedo boat group of 3 vessels, a submarine flotilla of 4 vessels, 2 minclayers, a transport flotilla of 8 small vessels and a very small number of seaplanes. The gunboats and sloops consisted mostly of new

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ships ordered from Japan; the submarines (also new) likewise came from Japan, whilst the torpedo boat group was made up of units newly supplied from Italy.

The Siamese Air Force, which forms part of the Army establishment, is small, but in 1940 it contained a number of up-to-date machines procured from the U.S.A.

Foreign Treaties

Although Siam has never ceased to be an independent country, her freedom of action was restricted by the various Treaties which she negotiated with foreign Powers from the year 1855 onwards. Not only did these agreements remove the nationals of the Treaty Powers from the jurisdiction of her courts of justice, but under their terms she had also undertaken not to impose import duties above a certain figure upon merchandise entering the kingdom from abroad; complete freedom of trade was likewise assured to the foreign Treaty nationals, who became entitled to equal treatment in this respect with Siamese subjects. As time went on, these restrictions were felt by the Siamese to be increasingly irksome and, already in the days of King Chulalongkorn, it had become the ambition of the Government to conclude fresh Treaties on a basis of full reciprocity. This ambition was realized in the years 1937 and 1938, after the introduction of a constitutional regime, when new agreements were negotiated with all of the Powers concerned on the desired basis. As has been said in another section, the last vestiges of the exterritorial system then disappeared; at the same time, Siam acquired complete freedom in tariff matters and in all other respects and she thus became, for the first time in her modern history, a member of the family of nations upon a footing of absolute equality. It is a melancholy thought that, only four years later, she was to fall from her newly won high estate and to pass under the domination of Japan.

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The Failure of the Democratic Experiment in Siam

It has already been said that the revolution of 24 June 1932 was accomplished by a union between certain Siamese intellectuals and a number of officers of the Army and Navy. The underlying motives of the revolution were twofold; there was a genuine desire (more especially with the intellectuals) to bring about the establishment of democratic institutions, but there was a feeling of dissatisfaction (evident more particularly among the military party) caused by the financial state of the country at a moment of world-wide economic depression. As a result of this depression the Siamese Government had been obliged to reduce expenditure drastically, and one of the reductions effected consisted in the cutting of official salaries. Much discontent was caused thereby in military circles which, however unjustly, were disposed to blame the king and the system of absolute monarchy for what was happening. Whilst it is true that the revolution represented at the time of its staging a predominantly democratic movement, it is thus none the less a fact that the motives which prompted it were not entirely disinterested, and this applies especially to the military faction among the conspirators. Subsequently, as time passed, the point of view of the military became still less disinterested; they realized that, without their help, the revolution could not have succeeded in the first instance and that, without their support, the constitutional regime could not have resisted its enemies. In short, the soldiers and sailors became conscious of the fact that they were the potential masters of the country, and it was not very long before they set out to exploit this favourable situation for their own purposes, first of all by securing the appointment to many important civilian posts of military or naval officers. It may be said that, throughout the period of office as Prime Minister of Phya Phahol (who, although a soldier, was a statesman of moderate

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views) the Government consisted of a coalition between the military and the democratic factions among the instigators of the revolution, with the balance of power inclining more and more to the side of the military, of whom Luang Pibul Songgram had by this time become the effective leader. When he succeeded Phya Phahol as Prime Minister in December 1938, the situation deteriorated rapidly from the point of view of the democrats, who, though not actually debarred from participation in the Government, were forced into complete political eclipse. Luang Pibul Songgram now assumed all real authority to himself and his friends, and so it came about that, well before the Japanese invasion, Siam was being governed by what was virtually a military dictatorship. The dictator, Luang Pibul Songgram, did not trouble to suppress the Constitution and was content to retain its outward trappings and to go on paying lip service to it. All effective power, however, was centred in himself and no one, least of all the members of the People's Assembly, was in a position to oppose his wishes. Meanwhile the boy king was absent from his realm in Switzerland, and the Council of Regency designated to represent him in Siam exercised functions which were purely honorific.

This rise to power on the part of the military will best be explained by the absence of anything like a valid public opinion in Siam, where the people are for the greater part poorly educated and care little or nothing for politics, whether domestic or international. This being so, the revolution must be regarded as having been a thing artificial in itself from the start, since it lacked the support of any spontaneous popular movement behind it. What happened afterwards was inevitable, and the moral to be drawn from it would seem to be that relatively strong armed forces, such as Luang Pibul Songgram had at his command, represent a danger to freedom in countries where there is no developed public opinion to keep the military leaders under control.

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Nationalism

It was, perhaps, only to be expected that the leaders of the new Siam which came into being after the revolution should have shown themselves to be ardent nationalists, but it was left to the military faction to push nationalist sentiment to the extreme of chauvinism.

One way in which this feeling has expressed itself since 1932 is through the adoption by the Government of that policy of economic nationalism to which reference has been made previously. In order to prevent the trade of the country from remaining permanently in the hands of foreigners, the authorities are now trying to create a Siamese mercantile class by every means in their power. Not only are certain professions and trades being reserved for Siamese subjects, but the Government is backing various semi-official business undertakings which have been set up under its auspices with funds mostly supplied by the state, for the purpose of competing with foreign firms. Opinions may differ as to the ultimate utility of such organizations as these, but, in view of the lack of fluid capital in private Siamese hands, the Government had no alternative but to provide itself the greater part of the money needed for their foundation and maintenance, if they were to be created at all. Vested commercial interests—especially Chinese, but also British—have suffered unavoidably from the prosecution of this policy, which is, however, laudable enough in principle and is inspired by a legitimate patriotism.

Not so praiseworthy are the aspirations of the military party in the matter of extending the territorial frontiers of the kingdom of Siam. These aspirations have in view the uniting into one state of all the peoples of Thai race, wherever they may be established, whether in Siam itself, in the Shan States or in French Indo-China. Unfortunately, the Thais outside Siam have not been consulted on this point, and there is

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nothing to show that they would welcome the loss of the more individual status which most of them now possess by coming under the rule of a highly centralized Government at Bangkok.

Less excusable still is the wish of the more extreme nationalists to reassert the nominal and fitful claims of Siamese monarchs in the past to supremacy over certain States in the Malay Peninsula. Here we have to do with a population differing entirely from the Siamese in race, religion, language and culture, and there could be no justification for subjecting these territories to the rule of Bangkok. These same chauvinists would like to see the annexation by Siam of certain districts in Lower Burma.

Various territorial concessions to France which have been imposed upon the Siamese during the past half-century have engendered among them an irredentist feeling which flared up after the French collapse in 1940 in the course of the war in Europe. The Siamese Government then demanded a rectification of the frontier with Indo-China and sporadic hostilities broke out along the border in consequence. They lasted until an end was put to them by the Japanese, who insisted upon mediating in the dispute. They awarded to Siam no more than a portion of what her Government desired and the decision pleased neither party.

Whilst the military have thus proved themselves to be thorough chauvinists, it is only fair to say that the bulk of the Siamese people are tolerant, easy-going folk who are content to live at peace with their neighbours. And it would be unfair to assume that the democratic statesmen among the Siamese share the chauvinistic tendencies of the military.

Siam and India

It has been explained in a previous section that the various Thai peoples, including the Siamese, derived their religion, their culture, and even the scripts in which they write, from

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India through the intermediary of the Mons and Khmers, who were already imbued with Indian civilization and with whom they came into contact in the course of their migrations southwards. This happened because, in the early centuries of the Christian era and for some hundreds of years afterwards, there had been a constant flow of visitors from the eastern shores of India to the countries of south-eastern Asia. These visitors were able to found states, and even mighty Empires, all over that region and, although the states in question have long since disappeared and the Indian colonists themselves have gradually become absorbed by the indigenous populations among whom they settled, they have left traces which are still to be discerned in the art, the culture and the religion of the Siamese, the Burmese, the Shans, the Laos and the present-day Cambodians. It is an astonishing fact that all memory of their former Indian conquerors or instructors has been erased from the minds of the different peoples of south-eastern Asia, whilst a similar forgetfulness prevails in India itself, where, except for a few stone inscriptions, this century-long process of colonization upon a huge scale appears to have left little or no record behind it.

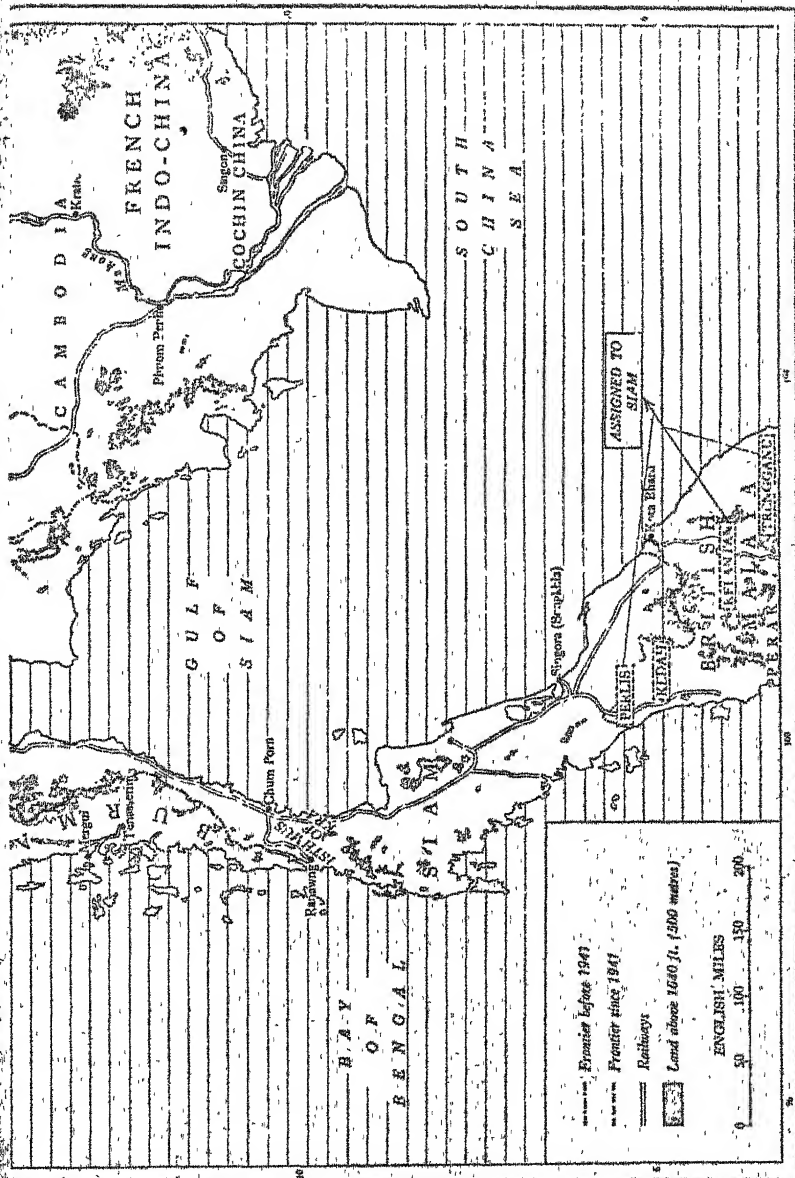
Whilst the Siamese are thus orientated towards India as regards their religion and culture, modern contacts between that country and Siam have not been very intimate. In the time of Ayuthia that city was visited for trading purposes by what European travellers of the period called Moors, who were probably either Indian Moslems or Arabs arriving from India. In 1941 there were some thousands of Indians (perhaps 50,000 of them) residing in Siam; some of them were merchants or shop-keepers, some were employed as watchmen and others were keepers of cattle. In normal times there is a certain amount of trade between India and Siam, the latter receiving chiefly gunny bags from the former and sending her rice in return.

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The Future

This is no place in which to discuss the reasons which led the Siamese Government to associate itself with Japan in the war which the latter is waging with the British Empire and the United States, but it will be readily understood that the Japanese found it easier to deal with an authoritarian regime such as existed under Luang Pibul Songgram than would have been the case if, when they forced their way into Siam for the purpose of attacking Malaya, they had been confronted with a constitutional Government of the kind which the promoters of the revolution had attempted to set up in 1932. There is good reason to conclude that the war is not, and never has been, popular with the Siamese in general, who have no quarrel with the British or Americans and who have never shown any particular liking for the Japanese. It is permissible to hope that, after Siam has been freed from her present state of submission to the will of Japan, the democrats will be given a chance to renew those efforts at establishing a constitutional form of government which began so promisingly but which were frustrated in the end by the selfishness of the military party.

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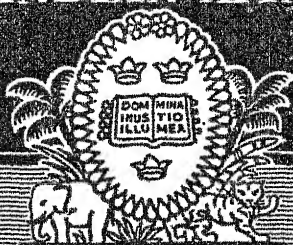
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BROADCASTING

SETH DRUCQUER

OXFORD PAMPHLETS
ON INDIAN AFFAIRS



OXFORD PAMPHLETS ON INDIAN AFFAIRS

No. 27

BROADCASTING

BY

SETH DRUCQUER



HUMPHREY MILFORD
OXFORD UNIVERSITY PRESS

BROADCASTING has developed late and slowly in India. The Indian Broadcasting Company, a private concern, went into liquidation after operating for only three years, and in 1930 the Government of India assumed control of its three stations. Today there are only nine transmitting stations in British India and four in Indian States, and although instrumental music forms a large part of any programme to be broadcast, songs, talks and news bulletins are also necessary, and with this small number of stations it is impossible to cater adequately for the needs of even the major language areas. A vast expansion is sure to take place after the war, and this pamphlet indicates some likely lines of development.

Seth Drucquer, B.A. (Cantab.), I.C.S., was a frequent broadcaster from the Calcutta station of All India Radio. He had written more than twenty radio plays, and used to speak daily in 1941-2 when he was Special Officer in charge of Civil Defence Publicity. At this period he wrote a short book entitled *Civil Defence in India*. Soon after completing this pamphlet, he was killed in an aeroplane accident.

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BROADCASTING

The Problem

THE Union of Socialist Soviet Republics, with a population of rather less than two hundred millions, has five hundred radio transmitting stations; India, with a population of more than four hundred millions, has only thirteen. It is against this background that any discussion regarding broadcasting in India, present or future, must be carried on. Furthermore, at the most modest estimate there are twelve separate major languages in use in India, and the number of dialects, many of them with important variations, runs into several hundreds. Listening in India is largely confined at present to the towns. Even if servicing of radio sets in rural areas were improved and facilities for recharging of batteries expanded, it would still be next to impossible, with the present resources, to reap the full benefit of distribution in the remotest areas; for the villager, though he may speak the major language of his province, prefers to talk in his local dialect and may find it hard to understand the more cultured or refined speech of the townsman. It is not possible, with the present very limited facilities for transmission, to broadcast in more than a few of these dialects, and the rest must go unsatisfied. And even were it possible to satisfy them, the prevailing illiteracy of the country would be another obstacle in the path of successful reception.

Broadcasting in India today, therefore, is largely an affair for the townsman and programmes must be evolved to suit the townsman's needs. This

is the paradox one is up against: on one side, there is the obvious truism that broadcasting is one of the most manifest signs of civic progress in this age; on the other one is constantly reminded that India is a land of villages and that the vast bulk of her population, despite the rapid growth of industrialization, are still agriculturists. No achievement can be considered really progressive unless it benefits the population as a whole, yet it is obvious that, for many years to come, broadcasting will only be able to benefit or influence a relatively small section of the population of India.

Origins

Broadcasting as a means of mass education and entertainment is of even more recent growth in India than in Europe. This may be urged as palliative for its failure to have covered the whole country—though a delay of a dozen years is small excuse when one considers the mighty achievement of Soviet Russia. The first Radio Club to be formed in India was established at Madras in 1924. Three years later the Indian Broadcasting Company was established with stations at Bombay and Calcutta. This was a private concern, licenced by the Government of India. By the end of 1927, there were over 3,500 licenced listeners in the country—infinitesimal, of course, in comparison with the total population but encouraging in view of the paucity of radio programmes and the difficulty of picking up programmes from overseas. Within two years, this number had doubled itself.

Like all new experiments, broadcasting depended for its success on sound finance, and it soon became evident that the expense of running these broadcasting stations was far in excess of receipts.

By the beginning of 1930, the Indian Broadcasting Company was compelled to approach the Government of India for direct monetary assistance. Two months later, the Company went into liquidation, and by 1 April broadcasting was brought under the direct control of the Government of India in the Department of Industries and Labour. Broadcasting in India, therefore, became what it has never become in England nor, still less, in America—an out-and-out branch of Government. This, it is true, guaranteed it financial stability, but lost it a certain amount of independence and also meant that it was subject to any financial stringencies or economies the Government might see fit to impose. Broadcasting in India was something new, and Government departments are not always receptive to new ideas. The consequence was that, throughout its early years, broadcasting had to struggle for funds for development against the arguments of persons not trained or educated to realize its potentialities.

This, however, is anticipating. Under the new arrangement, the institution's name was changed to 'Indian State Broadcasting Service'. Economy was by this time the order of the day. Where the Company had commenced working on a monthly expenditure of Rs. 33,000, the new service only received a monthly allotment from the Government of Rs. 22,000, thus forcing it to accept lower and lower standards in its programmes, and this at a time when expenditure on broadcasting in other countries was rising by leaps and bounds. By 1931, the financial position of the country as a whole, as in so many other countries, demanded urgent and immediate retrenchment in all directions. Broadcasting was by this time being run at

a loss and the Retrenchment Committee, despite its attention being drawn to the ultimate value of broadcasting to the state, decided that it was one of the matters to which the Government could no longer lend its support. A press communique of 9 October 1931 announced the intention of closing down the service.

This announcement met with such an outcry, in both the Press and the Legislature, that a month later it was decided that the Government would carry on the service for an interim period, during which proposals for its resumption by private enterprise would be considered. It soon became obvious, however, that private enterprise would not be likely to succeed where it had failed once before and that, if broadcasting was to be continued at all, it must be carried on as a state activity. Additional sources of revenue were found by raising the customs duties on radio instruments and accessories and by tightening up the regulations regarding licences.

A sudden and pronounced rise in the number of licences soon became apparent. The Government of India, however, could not congratulate itself on being primarily responsible as it was obvious that many of the new licences were encouraged by the regular transmission of programmes to the Empire inaugurated by the B.B.C. in December 1932. Customs revenue leaped from Rs. 56,000 in 1931 to over Rs. 4 lakhs in 1934—an expansion mainly due to improved reception of programmes from the B.B.C. rather than improved programmes in India. There was no doubt that interest in broadcasting in India was on the increase, and this induced the Government to be bolder in its generosity to the infant undertaking. At the

beginning of 1934, a separate broadcasting station for Delhi was sanctioned, in 1935 a separate office of Controller of Broadcasting. The first Controller was Mr Lionel Fielden, to whom more than anybody else is the expansion of the service in its early stages due.

In the meantime, a special fund of Rs. 20 lakhs was allotted for the development of broadcasting. It quickly became apparent, however, that an expenditure of ten crores would not be unreasonable in view of the country's size and all the different interests which would have to be served. Further, it was lamentably clear that there was nobody in India with the necessary training or technical experience to carry out these expansions. Not only was there nobody with sufficient knowledge of radio engineering, but there was nobody trained in the difficult art of designing and planning of programmes. Despite these handicaps to progress, only a further Rs. 20 lakhs was allotted to expand the scheme.

The cloth, therefore, must be cut to suit the pocket. Although it was clear that the country as a whole would not be adequately covered, it was recommended that seven medium-wave stations should be opened, in addition to the existing ones at Calcutta, Bombay and Delhi, with one short-wave station at Delhi for the transmission of news from a central point, and that the existing medium-wave station at Peshawar, run by the Marconi Company, should be purchased. The scheme was subsequently modified to provide for nine medium-wave and five short-wave stations. As a result of these proposals three medium-wave and five short-wave stations were opened between December 1937 and August 1938.

In the meantime, another change had occurred.

In June 1936, the designation of the Indian State Broadcasting Service was changed to the simpler and more dignified 'All India Radio', frequently abbreviated to 'A.I.R.' Two months later the A.I.R. was admitted as a regular Associate Member of the *Union Internationale de Radio-diffusion*, Geneva. At long last, broadcasting was coming to be recognized as a power in the state.

Developments

By the beginning of 1944, All India Radio had stations in operation—medium- or short-wave—at nine centres—Delhi, Bombay, Calcutta, Madras, Lucknow, Lahore, Peshawar, Trichinopoly and Dacca. Two more stations are under construction, at Karachi and Patna. It is of vital import for the education and development of the continent that many more stations are opened in the future. It will be realized, however, that as long as the war lasts further expansion will not be possible, except as emergency measures, owing to the difficulty of securing equipment; nor can it at present be foreseen how long after the peace we shall have to wait before essential plant can be delivered. For the next few years, therefore, British India's broadcasting centres are likely to be confined to eleven.

* That the nine existing stations are overworked according to any modern broadcasting standard is obvious at first glance. Quite apart from English, in which programmes are broadcast from every station and in which they are likely to be broadcast for many years to come, each station has to cater for listeners in at least two Indian languages and in many cases more. The number of transmitters in the country being strictly limited, the consequence is that no one language

can receive the full attention it deserves. And when one considers that this diversity of language not only applies to news and talks, but also to dramas, music and feature programmes, it will be realized that the task of the programme-designer is no easy one.

In the early days of broadcasting in India, European listeners probably formed the majority. Even now, however, when they are decidedly in a minority, it is still necessary to devote several hours a day to broadcasts in English, simply because it is the language that will be understood by the greatest number of listeners. Take Madras, for instance, which has to cater for listeners whose mother-tongue is Tamil, Telugu, Malayalam or Kannada; or Bombay, whose listeners may speak Marathi, Gujarati or Hindustani. Most of the listeners able to afford the luxury of a radio set will be sufficiently educated to comprehend broadcasts in English, or, at any rate, comprehend it better than rival Indian tongues from other regions. The somewhat disproportionate time devoted to English programmes can be justified on these grounds, and will continue to be so justified until India has a sufficient number of broadcasting stations for each to devote itself to one local tongue only. Nor should it be forgotten that a large and growing number of Indian listeners enjoy European music.

But diversity of languages is not the only problem the programme-designer has to face. He has to divide up his day so that all tastes and interests are satisfied. One only has to enumerate the different types of broadcast to realize how difficult this task is—news, talks, musical programmes, vocal and instrumental, drama, women's

programmes, children's programmes, school programmes, religious broadcasts, rural broadcasts, outdoor broadcasts and broadcasts for industrial labour—and nearly all of these, as has been emphasized before, in two or more languages. Those who complain of the composition of programmes from All India Radio should bear these factors in mind. Not all listeners enjoy the same type of programme, and even within the same type—such as talks or music—tastes vary widely. (An examination of any Station Director's fan mail is illuminating in this respect.) Table IV at the end of this pamphlet shows the relative number of hours taken up by the different types of programme, in descending order, for 1943, the latest year for which figures are available.

This order is apt to vary from year to year, but does not necessarily depend on public choice—the demands of propaganda and war news, for instance, may compel a disproportionate amount of time being devoted to these items.

Programmes and their Composition

The composition and arrangement of programmes is one of the main tasks of any broadcasting station. Ultimately responsible is the Station Director, who will normally be assisted by an Assistant Station Director, but his routine administrative duties will be too heavy to enable him to devote much time to the composition of any particular programme, beyond laying down the general lines of policy.

The actual design of the programmes and the contacting and engagement of artistes are left to Programme Assistants, one of whom will be assigned to each department in the larger stations, but who may be in charge of several departments

in smaller stations, where the total transmission time is not so lengthy.

It is not necessary to enter into details regarding the structure of programmes. One or two points may, however, be mentioned which might not be apparent at first glance. In the first place, music plays a preponderantly large part in any broadcasting programme. Quite apart from the periods devoted to music and to nothing else, music can always be used to fill in those odd five minutes between programmes or to bridge that awkward gap where another programme has not run to quite the anticipated length. Every radio station keeps a large stock of gramophone records which, apart from being used as 'effects' or background, can be turned on at any moment when required. One of the cardinal rules of broadcasting is that there must be no blanks of silence during the period of transmission.

Radio programmes are, again, subject to an important limitation that does not affect the sister arts of the theatre or the cinema—the time factor. Within certain limits, a play or a film or a talk in a lecture hall or on a public platform can run for any length of time it chooses, to suit the artistic or other demands of author or speaker. Radio programmes, however, do not allow of this latitude. They are designed to fit into a particular schedule, and the speaker or author must remember that if he exceeds this schedule he will overlap into the time allotted to the next programme and may find himself in the unhappy position of being cut off in mid-speech or mid-play. To 'run short' is almost as great an offence as to 'overcarry' in the eyes of radio administration. Both authors and speakers (and, for the matter of that, singers and orchestra conductors) have to frame their pro-

grammes so that they cover the exact number of minutes allotted to them—no more and no less. This undoubtedly detracts from the artistic perfection of a programme, as no writer likes to be tied down to a definite number of words, but it is unavoidable and likely to be a permanent drawback of broadcasting. Normal times allowed for talkers are five, ten or fifteen minutes, rarely longer (any voice on the air grows monotonous after fifteen minutes and at all costs the listener must not be bored). Dramas may run for fifteen, thirty or forty-five minutes, although the present-day tendency of All India Radio is to discourage plays of more than half an hour—a mistake in the author's view, as dramatic treatment within this short compass of time is not always possible.

It is, perhaps, less difficult to accommodate a talk into a given space of time than a drama. The subjects for radio talks are, of course, infinite, but talks of a general or literary nature are comparatively rare from All India Radio, the majority of talks scheduled being of a 'topical' nature—at the present day, of course, more likely than not connected with the war. Here, again, we are up against one of the quandaries that beset the programme composer. Programmes are projected as far in advance as possible—the schedule is normally sent to headquarters at Delhi about three months in advance, and is actually published three weeks ahead of broadcast in the *Indian Listener*. It is not, however, possible to foretell at the time of scheduling programmes what will or will not be topical in three months' time. A certain number of blanks must, therefore, be left in every schedule for such topical features, which will often have to be written and broadcast at very short notice, sometimes only a few hours'

notice. If no suitable topical material turns up, there are always the gramophone records to fall back upon.

A topical programme has to rely on its spontaneity for its effectiveness, for there will be little time to rehearse it. Ordinary programmes, however, involve a great deal more rehearsal than is commonly imagined. A drama, for instance, must be rehearsed not only to ensure that the 'effects' are convincing, but also to see that it does not overcarry the time allotted to it. Songs must be practised carefully to make sure that the singer is placed in the correct position in relation to the microphone, and so on. Generally speaking, programmes broadcast in India suffer from under-rehearsal, when compared with programmes broadcast from the B.B.C. There are several reasons for this—lack of sufficient rehearsal studios in the average broadcasting station; the low rates of honoraria offered to artistes, judged by foreign standards, which makes them reluctant to spend too much time in the studio apart from the actual broadcast (though it should be recollected that the majority of artistes in India are amateurs whereas the majority elsewhere are professionals); and the fact that there are, as yet, very few people in India really technically qualified to act as producers of programmes. The net result is that, for some years to come, programmes broadcast from All India Radio will always have a tinge of the amateur about them. ✓

Another feature of broadcasting, common in the West but comparatively undeveloped in India, is the outdoor broadcast. Lack of equipment and wiring is responsible more than anything else for lack of development here. Such outdoor broadcasts as have been given have been confined

to commentaries on football matches and the like, and there has been little attempt made for the microphone to follow the news as in England. There is obviously a large field for development here, as soon as All India Radio is able to secure the necessary equipment, whether locally or abroad. (More recently, however, efforts have been made to obtain recordings of 'actuality' broadcasts near the Front Line, by Calcutta and Dacca stations of A.I.R. acting in collaboration, and Delhi, Madras and Bombay have also been putting out similar programmes.

Broadcasts for Special Audiences

The average radio programme can be enjoyed by any listener provided he is familiar with the language in which it is given. Music is enjoyed by all, the majority of listeners appreciate dramas and those with sufficient education can settle down with comfort to listen to talks and news bulletins. There are certain types of programme, however, which are directed to only one specific type of audience and for which room has to be found on the air, even though other listeners are disgruntled in the process. Usually, however, it is possible to fix each broadcast at hours of the day when the general body of listeners do not find time to listen, and hence no inconvenience is caused. Programmes for schools, for instance, are broadcast in the early afternoon when the pupils are assembled but most adults are at work, and broadcasts for women are fixed in the late afternoon, at a time when the intended listeners can relax from their housework.

It is worth looking at these specialized programmes in somewhat more detail. To take the case first of educational broadcasts and broadcasts

to schools. Such broadcasts are now an everyday feature of life in Britain and are recognized as part of the regular school curriculum. The majority of schools are equipped with radio sets, and both teachers and pupils regard such broadcasts as valuable supplements to their own class instruction. In India, however, one comes up against the initial handicap that very few schools can afford to purchase or maintain the necessary equipment and such few as can are situated mainly in the large towns, difficulties of maintenance being an added drawback elsewhere. Anyone, also, who is familiar with the mentality of many underpaid village schoolmasters will understand the jealousy with which they view anything which they consider encroaches on their prerogatives, and a rival founthead of knowledge is severely discouraged. Apart from this, however, the main obstacle in the way of the development of educational broadcasts is not a lack of will but a lack of equipment. Universities and educationists have long since realized the value of such broadcasts, and it may be expected that this will be a major line of development in the years of reconstruction after the war. Such broadcasts have, in actual fact, been in existence since 1928 and have been considerably expanded since then, and a whole range of subjects, from literature and history to the more difficult sciences, are covered by them. Equal attention is paid to the different standards, whether primary or advanced, and, as far as the time factor is concerned, All India Radio is probably doing as much as it reasonably can. There is, however, a dearth of really qualified speakers willing to give their services and, as elsewhere, there is the language difficulty to be

faced. Where the radio station serves peoples speaking three or four different languages the individual time in which talks in different languages can be broadcast must be severely restricted—for it must be realized that for the purpose of educational broadcasts, except for the teaching of ✓ the English language, the use of English should be avoided as far as possible.

But whatever the problems of administration and arrangement of such programmes, the greatest problem is that of reception, until a much larger number of schools and colleges are equipped with sets—whether through state subvention or otherwise—and until the spread of electricity in rural areas makes the servicing of sets more feasible. According to the latest figures obtainable, only 143 colleges and 721 schools throughout the length and breadth of India are equipped with receivers. When one considers that any average District of Bengal will have twice this number of educational institutions—primary, secondary, collegiate or female—one realizes what enormous possibilities of expansion lie open for the future; nor should it be forgotten that broadcasting has been found of immense value for purposes of adult education.

Another feature of broadcasting fraught with immense potentialities is the relay of programmes for rural audiences. As the vast majority of India's population are agriculturists, this would seem to be the most fruitful field for expansion, except that here again we are up against the twin difficulties of language and lack of equipment in the areas designed to be served. The first attempt to undertake village broadcasting was made by the Government of the North-West Frontier Province in 1935, through the enterprise of the Marconi

Company which offered the Government the free loan of a transmitter and some village sets, on condition that it would purchase them after a year if found satisfactory. 'The receiving sets used were specially made not only to resist heat, dust and insects but also to give a volume of sound which could be heard at about one hundred yards' distance. The aim of this was to enable the villagers to listen in their houses or, to put it in another way, to force broadcasting upon the villager. . . . The programmes given were, in most cases, digests of agricultural pamphlets, etc., and owing to a lack of skilled editing tended to be above the heads of the villagers.' The experiment, nevertheless, was of value as showing the kind of problems the designers of the scheme were up against.

Other provinces carried out experiments on similar lines, one of the most notable being undertaken in the District of Midnapore in Bengal as part of the policy of reclaiming the District from the effects of terrorism, which was prevalent at the time. In all these cases, however, the biggest obstacle proved to be distance, which involved difficulty in supervising the actual listening-in to the programmes. More successful, owing to its greater proximity to headquarters, has been the intensive scheme for rural broadcasting set up in Delhi province. This is intended to be a model scheme for the whole of India, and 120 community receiving sets are now in operation. The villages where the sets are located are relatively close together and are divided into five 'circles', each with a charging unit and mechanic attached. Another very widely different scheme has been put into operation by the Government of Madras. The very latest scheme of all, inaugurated on

✓ 17 April 1944, provides for the installation of 800 community receiver sets in villages in three Districts of Bombay. Rural programmes are now broadcast daily from most stations of A.I.R.

Apart from problems of servicing and supervision there are other technical difficulties in the way of rural broadcasting in India. Atmospheric conditions, for instance (to which more reference will be made later), make community-reception very difficult in Bengal between May and September. All the same, a large part of broadcasting in India must in the future concern itself with rural areas and these difficulties will have to be overcome. One possible solution is the establishment of small local transmitters at important District headquarters. Europe has long since realized the value of rural broadcasting, and India will realize it also, as part of the programme of rural uplift. To quote a report on recreation in rural areas published by a European Conference on rural life in 1939, held under the auspices of the League of Nations, 'it has been noted that in countries where rural life has reached a high standard of well-being, individual listening has developed very rapidly; in every farm that is comfortably off, there is a wireless set. . . . In nearly every country, the agricultural programme provides for weather forecasts, a review of the quotations of agricultural products and talks giving practical information. The talks are prepared by agricultural experts, and it is noted that they must be given in a lively and agreeable manner and be easy to understand; for example, they should take the form of a dialogue and should not last more than from three to fifteen minutes. . . . In Denmark, 75 per cent of all families have a set. In Italy, there are 40,000 sets in the people's houses,

co-operative organizations and women's institutions, and the villagers meet in the premises of these organizations in order to listen to the "farmer's hour". . . . In Czechoslovakia, there are exchanges of talks and performances between town and village and between different villages. For this purpose, the villagers, with the assistance of technical experts, construct short-wave sending stations. The idea appears to offer great possibilities.'

Another type of broadcast for specialized audiences is that for industrial workers. This is the latest specialized type to be introduced, but one which must play a big part in developments in the future. Here, again, the contents of the programme must be very simple, not much above the intellectual level of the rural programmes, although the composition will be different, at any rate as regards the talks. The technical difficulties are, however, not to be compared with those of broadcasting in rural areas. Many mills and industrial organizations maintain community receivers and encourage their workers to gather round and listen to the programmes arranged on their behalf. Electricity, also, is plentiful in industrial areas, so that the recharging of batteries, that nightmare of village listening, is not a problem.

Community Receivers

Reference has been made in the preceding paragraph to the use of community receivers in the village. These are, normally, the only practicable form of receiver in rural areas, as few villagers are wealthy enough to purchase or maintain sets of their own. Where community sets are not directly provided and serviced by some Government department, they must be

maintained by some local body, such as a District Board or Union Board, and some one man in the village has to be made responsible for their actual operation; otherwise, it becomes a case of everybody's business being nobody's business. Broadcast receiver licences can be issued to local bodies, such as municipalities, 'to enable them to reproduce to the general public, free of charge, broadcast programmes'. It has ✓ been the policy of All India Radio, however, to discourage community listening as far as possible, except in villages, as it limits the sales of independent receivers and hence diminishes All India Radio's revenues, and also because community receivers are technically often unsatisfactory and disturb the reproduction of the programmes broadcast. The wisdom of this policy is doubtful, particularly in the poorer areas of large towns, where community listening should be encouraged every bit as much as in the villages. The policy has been relaxed under the stress of war, in order that news and topical features may be disseminated as widely as possible.

Some Technicalities

The technical problems of broadcasting are different from those of Europe and in most cases they are more complicated. Owing to the very great distances which have to be served, short-wave transmission is a necessity and this in itself is a problem for the future development of broadcasting, owing to the shortage of space on the short-wave bands. There is by this time not much room for fresh stations on those bands without danger of interference, and the authorities frankly admit that the future in this respect gives cause for anxiety.

Another problem, intensified in India, is that of the relay of programmes from one station to another. The usual method is by special telephone wire circuits between one station and another. Distances between stations in India are great, and the only economic method is by overhead telephone wires, which are extremely difficult to keep free from disturbances. The system has, therefore, been developed whereby each station is provided with a receiving centre equipped with special directional aerials for picking up programmes from other stations, mainly short-wave transmissions of All India Radio and the B.B.C. These are then relayed from the local transmitter.

The greatest single technical difficulty to be contended with, however, is that of atmospherics, particularly in the monsoon months from May to October. Although conditions have improved with the improvement in receiving sets, everybody who listens in during the monsoon months will recollect the frightful cracklings and disturbances that frequently interrupt his enjoyment of the performance. Conditions vary from region to region and the drier areas come off the best. Any attempt, however, at consistent all-the-year-round broadcast of all types of programmes is faced with this problem.

In April 1937, a special Research Department of All India Radio was created. In addition to dealing with the problems mentioned in the preceding paragraphs, it is now making studies of the ionosphere by regular pulse transmissions; measurements of the angle of downcoming waves; theoretical studies and measurements of different types of transmitting aerials for the short-wave service and studies of broadcast receivers and special cheap receivers.

Staff and Administration

Any form of enterprise must depend, in the last analysis, on the staff appointed to run it. All India Radio, as any other broadcasting organization, has two pillars on which to rest—the staff which arranges the programmes and deals with the technicalities of transmission, and the artistes who put the programmes across to the listening public. To take the question, first, of staff. All India Radio is a Government institution and its salaries, as all other finances, are debited to the Central Budget. As is the case with all other newly-started Government departments which have to prove their worth and permanent value to the state, All India Radio was for long on a temporary basis, the members of its staff in theory liable to have their services terminated on a month's notice, and with no claim to pension or provident fund at the end of their service, however long it lasted. The Government of India, it is true, has at last recognized the permanent value of broadcasting and has, during the past year, converted it into a permanent service, so that members of the staff now have a far greater feeling of security than formerly. This feeling of insecurity, however, permeated broadcasting in its early years in India, and its effects will take some time to wear off.

Coupled with this question of insecurity is that of salary. No Government servant expects to be paid at the rates offered by commercial undertakings, but rates of pay for employees of All India Radio have, on the whole, been poor even when judged by ordinary Government standards. A programme assistant has to be a versatile young man; he must not only understand the art of

composition of programmes, so that there is proper variety and balance, but he must know the most effective way of putting them across. He must know the most suitable people to engage as artistes for talks, dramas or musical programmes and must, in fact, if he is to do his job properly, understand the subject of which he is in charge from every angle. As things turn out, he must also understand everything about every other assistant's job, as it has been the policy of All India Radio to transfer programme assistants from one department to another every few months, to give them experience in all aspects of broadcasting. Thus a man may be in charge of English talks one month, outdoor broadcasts the next and Indian musical programmes a third. Though this may succeed in preventing staleness, it also successfully prevents continuity, and one cannot help feeling that very few assistants of All India Radio are allowed to settle down to learn any one aspect of their job really thoroughly. On top of this, an assistant is unable to devote his whole time to the artistic side of his job, the arrangement and putting across of programmes, as he has a great deal of routine office work to do, much of it sheer drudgery and certainly involving a great deal of his time and energy.

This brings us to one of the greatest disadvantages under which All India Radio labours at present—inadequacy of staff. Where an English or American broadcasting station would employ at least three persons—one to maintain outside contacts and search out the best artistes to take part in the programme, another to arrange the programme, time it, rehearse it and sponsor its actual production on the air, with a third to deal with the office routine of issue of contracts and

copying of scripts and filing, the average assistant of All India Radio has to undertake all three functions, with the inevitable result that he is unable to devote sufficient time to any. The true programme assistant should himself be an artist in relation to the programme he is organizing; more often than not, his functions approximate to that of the clerk. Nor is All India Radio, able to deal adequately, from the Public Relations point of view, with its large fan mail, owing to smallness of staff.

✓ As has already been stated, it is only during the past year that the staff of All India Radio has been placed on a permanent basis. Even with this inducement, however, the salaries offered are not attractive by modern standards. It has been suggested above that the programme assistant has to be a jack-of-all-trades, ready to turn his hand to any aspect of the station's work at a moment's notice—apart from the engineering and technical branch, which has a special staff all of its own. The starting pay, however, of a programme assistant is only Rs. 175, which cannot be considered high when placed alongside all the other opportunities now open to enterprising young men. It may be attractive to a young man fresh from college and may be sufficient to maintain him for a few years, but if he is really capable and has ambition it is not long before he starts looking round for more lucrative employment elsewhere, and for this he is scarcely to be blamed. This, in fact, has been one of the biggest problems All India Radio has had to face since its inception—the lack of any real continuity of personnel. It should also be borne in mind that programme assistants have to come into contact with all manner of persons, including the highest in the

land when they come to the studios to broadcast. They have to maintain certain standards of living and deportment to enable them to do their job with any degree of efficiency, and here again they are faced with the problem of making ends meet. Even the highest officials of the service are poorly paid when contrasted with other Government departments, and the fact that All India Radio has achieved the success it has is due in large measure to the fact that it has been guided and directed by a band of enthusiasts who care more for the art of their profession than for the remuneration they draw from it.

But if efficient programme assistants are essential to the success of broadcasting, efficient artistes are equally essential. Here, again, All India Radio has to face difficulties which the more advanced broadcasting institutions of the West do not have to face. Apart from the celebrity invited to give a topical talk, whether he be cabinet minister, field-marshal, big-game hunter or champion athlete, the ordinary radio artiste is a professional—actor, singer, musician or literary man—who earns his living at the game off the air as well as on it. He merely has to adapt the technique he has learned elsewhere and which provides him with his daily bread to suit the particular artistic and technical demands of the radio. In many cases, professional performers are able to confine their activities to the radio, and by appearing at regular intervals in programmes are able to support themselves on the proceeds. All India Radio, however, is not able to call upon such talent. As far as programmes in the English language are concerned, there are virtually no professional artistes in the country at all and the programme-designer has no alternative but to call

upon the services of amateurs, who may or may not be competent and who, quite likely, are only called upon because there is nobody else to turn to and if there was not somebody to read the lines, the whole programme would fail. The smaller stations, in particular, suffer badly from this absence of professionals or really competent amateurs and the most incongruous persons are sometimes roped in to give talks or take part in dramas at short notice. The author recollects the case of a missionary lady, charming, cultured and excellently informed, who was nevertheless bewildered on being asked at short notice to give a talk on the development of the British Navy.

The case with Indian programmes is scarcely any different. There are professional singers and musicians, it is true, but up till very recently the profession tended to be looked down upon and despised much in the same way as it was in mid-Victorian England, and many performers, for this very reason, prefer to retain their amateur status. Professionalism in song and music was for long associated with professionalism of a less respectable nature. With the growing sophistication of the modern age, this attitude is being broken down, but it is likely to be many years before All India Radio can call on the services of professional artistes in sufficient numbers to provide the variety necessary for any broadcast programme.

It may also be noted that the honoraria offered for performing on the radio are not, as yet, sufficiently rewarding to attract the best artistes. Financial stringency is, doubtless, the reason, but the fact remains that even the most competent performers are paid at about one-tenth the rate artistes of equal capability would receive in Western countries. Government servants who

take part in broadcasts have to suffer additional restrictions, with the inevitable result that the 'regulars' nearly always broadcast for the sole reason that they enjoy broadcasting, whilst better talent, if available, is often discouraged from accepting contracts because of the poor remuneration offered. Even if the fee in itself looks tempting at first, it may include two or three rehearsals before the actual broadcast, with no allowances made for cost of transport to and from the studio. The result of this is that many programmes tend to be under-rehearsed, as artistes avoid attending all but the bare minimum of rehearsals.

Broadcasting and the War

The war has influenced broadcasting in a variety of ways, particularly since the entry of Japan at the end of 1941. Topical talks and topical features have increased greatly both in number and in quality of content, news bulletins have become far more frequent and, generally speaking, propaganda—that word which strikes so odious a note in many ears—has found an ideal vehicle for its activities in the radio. In India, the effect of the war on broadcasting has been most marked in two directions. Firstly, a large number of really expert speakers have been found in the Allied Forces to give specialized talks on subjects on which they can speak with authority, whilst programmes specially devised for the fighting forces have included professional artistes from other countries at present serving in India and have given pleasure to civilian listeners. Secondly, the demands of war-time news and war-time propaganda have been responsible for an enormous expansion of the Department of

Information and Broadcasting under the Government of India. From being a mere adjunct of the Department of Industries and Labour, it is now an entirely separate department on its own, and one of the lustiest youngsters at New Delhi, with a separate member of the Viceroy's Executive Council in charge. The importance publicity has acquired during the war is not likely to diminish after the war is over, for the advantage to the state of a really efficient publicity organization has at long last been recognized. There is, therefore, no reason to fear any restriction of the department's activities once hostilities are over.

It must be borne in mind, however, that even in war time All India Radio is running in competition with the B.B.C. and the stations of foreign countries, whether allied or enemy. If Indian programmes have improved under the stress of war, so also have those of the B.B.C. and those of the enemy, and many listeners in this country prefer to tune in to programmes coming from outside merely because of their superior quality. All India Radio is once again up against the problem of amateurs versus professionals, and how this problem will be solved in the future it is difficult to foresee.

The Future

Broadcasting as a medium of entertainment, instruction and publicity has come to stay. There is no turning back the hands of the clock of progress. Are the hands, however, to move on, or is the clock to come to a standstill? What, in other words, is to be the future of broadcasting in India?

One is brought back to the problem posed in the first sentence of this pamphlet. The future

of broadcasting in India will depend inevitably on the extent to which existing facilities can be expanded and developed. It is certain that there will be an enormous increase in the listening public as soon as receiver sets become better and cheaper with the advance of science. It may be that there will be scope for the manufacturer of such sets in India itself, with the growing industrialization of the country. Hitherto, radio equipment of whatever shape or form has been imported. Imports have largely stopped with the war, but there has been lack of materials and machinery to replace imports inside the country. It is possible that receiving equipment may be manufactured here in the future, or at any rate assembled. It is a point which might well be considered by those planning the future industry of India.

But equipment is not of much value without the personnel to understand its use and upkeep. One of India's most serious shortages is a dearth of radio engineers. It has already been stated that one of the inconveniences of listening in rural areas is the difficulty of servicing and maintenance. This applies, in the main, to the lack of electricity and the difficulty of charging batteries and replacing parts. There is an equal lack of radio engineers to put receiver sets to rights when they go wrong. Radio engineering as a profession does, in fact, hold out enormous possibilities for the future and might well be considered as one means, however small, of solving the problem of post-war unemployment. In particular, there are many recruits to the armed forces with experience of wireless operation and it should be possible to find them employment on these lines when they are demobilized. But it must be borne in mind that jobs will not be found for them unless there is a

corresponding expansion both in the numbers of the listening public and in the facilities for listening.

As far as can be foreseen at present, the two directions in which expansion is likely to be the greatest are in rural and industrial broadcasts and in education. In the sphere of entertainment it is difficult to see how much improvement can be effected until the problem of amateurs and professionals is solved—and it is not likely to be solved until professionals are accorded a higher place in society and have better prospects for remuneration than they have at the present day. In the other spheres referred to, however, there is still enormous scope for expansion. Broadcasting is likely to play a large part in the school curriculum of the future, and the Sargent Report on Education has been careful to underline its value; a village school for instance, with a poorly paid, ill-equipped staff, will be immeasurably benefited if its classes can tune in to authoritative talks from well-known, respected educationists, quite apart from the fact that the whole basis of education can be broadened by the introduction of features of General Knowledge. But once again, it must be emphasized that such broadcasts will be of no use unless there are the receivers in the schools to pick them up; and the receivers will be of no use unless there are the necessary facilities to service them.

It is the same with rural and industrial broadcasts. The whole outlook on life of the agriculturist or the factory worker can be changed by the intelligent use of broadcasting, entertainment being carefully intermingled with instruction; but here again, the degree to which such broadcasts will be useful will depend on other factors than the actual composition of the programmes.

Up till now, nothing has been said on the subject of television in India. So far, the prospects of its wide use are slender, at any rate for the immediate future. Even in Europe, television is only in the experimental stage and television sets are far beyond the reach of the ordinary citizen. Television, again, is only effective for comparatively short distances from the radiating station and there is no immediate prospect of its success in India, where each station has to serve such vast areas. Until India has broadcasting stations greatly in excess of her present number, television is likely to make little headway.

Broadcasting is a fascinating game, and much more than a game to those who take it seriously. It can be one of the greatest civilizing factors of the modern world, if its potentialities are handled wisely and with imagination. All those concerned with the future of India most ardently desire a rise in her standard of living. Broadcasting holds out possibilities to raise that standard, both by providing a greater variety of entertainment for the leisure hour than the ordinary citizen is normally able to command and by providing him with the means to raise his standard for himself. It is a tool of great value in the hands of those responsible for framing the state's policy; and it is a subject which is not likely to be forgotten by those in charge of reconstruction and planning for the future prosperity and happiness of India.

Reed
12.6.45

BROADCASTING STATIONS IN INDIA, 1944

Short-wave Stations

Delhi (8 transmitters, two of 100, three of 10, two of 7.5 and one of 5 kilowatts).

Bombay	(10 K.W.)	Madras	(0.5 K.W.)
Calcutta	(10 K.W.)	Mysore	(0.25 K.W.)

Medium-wave Stations

Delhi	(20 K.W.)	Peshawar	(10 K.W.)
Dacca	} (5 K.W. each)	Bombay	(1.5 K.W.)
Hyderabad (Dn)		Calcutta	(1.5 K.W.)
Lahore		Aurangabad	(0.5 K.W.)
Lucknow		Mysore	(0.3 K.W.)
Trichinopoly		Madras	(0.2 K.W.)
Trivandrum			

Diversity Receiving Centres

Bombay	Calcutta	Dacca
Delhi	Lahore	Lucknow
Madras	Peshawar	Trichinopoly

Under Construction

Karachi	Patna	(5 K.W.)
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Note.—All broadcasting stations in British India are controlled by All India Radio.

TABLE I

Number of Radio Receiver Licences in Force

1927	3,594	1939	92,782
1932	8,557	1944 (Feb.)	1,89,096
1935	24,839		

TABLE II

Recurring Budget of All India Radio

1938-9	Rs. 22,32,000	1943-4	Rs. 47,77,000
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Expenditure on Programmes

1930-1	Rs. 80,469	1938-9	Rs. 6,36,142
1932-3	Rs. 72,231	1943-4	Rs. 13,67,400
1936-7	Rs. 3,34,964		(unaudited)

TABLE III

Programme Transmission Hours

1938-9	29,859	1943-4	59,598
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TABLE IV

Programme Composition at the Stations of All India Radio

(In hours) 1943

	BOMBAY	CALCUTTA	DACCA	DELHI	LAHORE	LUCKNOW	MADRAS	PESHAWAR	TRICHINOPOLY	ADD'L S. INDIAN STN.	TOTAL
Indian Vocal Music ...	2032.10	1,157.80	1,143.41	2,213.90	1,704.00	1,659.76	1,523.39	1,517.80	1,219.83	766.15	14,943.14
News ...	974.10	956.91	510.00	2,047.18	683.96	647.44	857.30	6.43	537.63	174.98	7,395.93
Miscellaneous ...	298.05	403.51	180.66	905.36	492.96	438.94	342.79	422.83	371.76	63.75	3,920.61
Indian Instrumental Music ...	271.61	203.95	180.86	402.55	183.43	248.15	799.35	182.25	628.67	395.98	3,496.80
Lectures and Talks ...	250.95	490.43	172.46	291.15	194.73	247.99	148.94	153.86	291.13	34.88	2,276.52
European Instrumental Music...	576.25	363.23	42.65	230.75	33.33	29.32	212.44	4.28	29.75	128.83	1,650.83
Radio Drama, Poetry, etc. ...	61.24	219.20	105.53	123.45	100.65	116.77	119.65	153.22	69.80	28.13	1,097.64
European Vocal Music	59.36	220.33	22.06	218.91	10.63	33.30	68.69	17.88	9.45	41.98	702.59
Educational Broadcasts	79.62	70.65	29.75	67.46	8.20	8.03	142.48	...	119.68	...	525.87
Religious Services ...	...	59.81	26.91	48.05	16.56	2.20	...	10.16	50.00	...	213.69
Mixed Transmissions	...	41.81	31.33	..	7.21	...	28.81	0.25	87.35	5.63	202.39
Total ...	4,603.28	4,187.63	2,445.62	6,548.76	2,835.66	3,431.80	4,248.80	2,468.96	3,415.05	1,640.31	36,426.01

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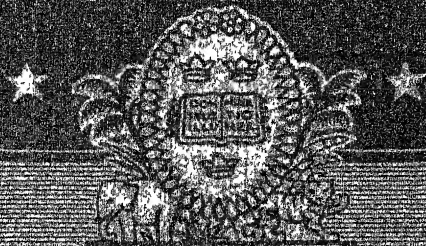
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OXFORD PAMPHLETS ON INDIAN AFFAIRS

No. 28

MINERAL RESOURCES

BY

A. M. HERON



HUMPHREY MILFORD
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GEOLOGICALLY India is divided into three distinct regions: the Himalayan arcs, poor in useful minerals but yielding some oil at their eastern and western extremities; the alluvial plains of the Ganges and Indus, which provide only clays and lime; and the ancient peninsula in which lies almost the whole of India's mineral wealth. Although nearly a quarter of the peninsula, the Deccan, is covered by a thick deposit of almost valueless lava, the schists of the remainder yield good supplies of iron, manganese and gold ores, and the mica in the production of which India excels. In the north-eastern part lie the rich Gondwana coalfields, deposited in former river-valleys. With coal and iron India is well supplied, but is singularly poor in tin, lead, zinc and copper.

A. M. Heron, D.Sc., F.G.S., F.R.G.S., F.R.S.E., F.R.A.S.B., F.N.I., was educated at the Royal High School and the University of Edinburgh, graduating in engineering in 1906. In the same year he joined the Geological Survey of India and retired as Director in 1939. During his service he worked chiefly in Rajputana and published many papers on the geology of Rajputana and Burma. In the last war he was employed on the tungsten operations in southern Burma, and was geologist on the Mount Everest Expedition of 1921. He is now Director of H.E.H. the Nizam's Mines and Geological Survey Department.

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MINERAL RESOURCES

Early Days

SINCE the dawn of history India's gold, iron and diamonds have been famous. It is believed by some that the Land of Ophir of Solomon's time, from whence came apes and ivory, peacocks and gold, was southern India.

The ancient gold-reef workings of the Raichur district in Hyderabad (Nizam's Dominions) went down to a depth, unreached elsewhere, of 650 feet, by the primitive method of fire-setting. They appear to have been excavated by people who, as far as their implements were concerned, were still in the Stone age, though their date has been put at something about 500 B.C. It has been suggested that in India the Stone age culture passed directly into the age of Iron, without the intervention of the Bronze or Copper ages of Europe, owing to the rarity of copper and tin deposits in India.

Gold-mining seems to have ceased before the contact with India of Chinese traders about the seventh century A.D., though alluvial washing for gold in the beds of some of the rivers no doubt persisted in some localities, as it still does to the present day in a very small way. Mining for gold in quartz reefs under modern methods began in Mysore State in the eighties of the last century and has been conspicuously successful.

Before the Christian era and through the Middle Ages, the famous *wootz* steel of India was exported to the Mediterranean lands and the Middle East, and was worked up into the famous 'Damascus' blades. Its virtues were not due to any special

qualities in the ore, for the primitive iron-smelters used ore which the modern steelmaker would scorn, but to the charcoal fuel used, and to the laborious treatment of the iron produced, by repeated reheatings in charcoal and rehammerings, in a crude process anticipating the cementation of crucible steel. A few of the primitive furnaces still survive in the central parts of the peninsula, remote from railways, and turn out small quantities of soft iron for purely local needs. An outstanding specimen of this early industry is the wrought iron pillar at the Kutb Minar, south of Delhi, which is 23 feet 8 inches long, over a foot in diameter, and weighs six tons. It is believed to have been forged about A.D. 415.

Under modern methods iron was first smelted commercially in the seventies of the last century on the Raniganj coalfield, and in 1911-12 the Tata Iron and Steel Co. started. The Tata works is now the largest self-contained plant in the world, outside the U.S.A. and the U.S.S.R.

Until the Brazilian diamond fields were discovered in 1727, India was the only producer. All the famous diamonds of history came from Golconda, the wealth of which was proverbial in the early days of European mercantile adventure in India. Golconda, the capital of the Kutb Shahi dynasty, was, however, only a mart and a cutting centre for the mines in the northern districts of Madras. Nowadays diamonds turn up only sporadically and accidentally in that area, but mining is still carried on in the State of Panna, in Central India, where the value of the output varies between half a lakh and a lakh of rupees annually.

At the beginning of this century the value of

India's annual production of minerals was about £5 million sterling; in 1938, the last year for which statistics are at present available, it had risen to £25 million (Rs. 34 crores).

Geological Outline

As the minerals of any area depend essentially on the rocks of which it is composed—their composition, their age and the changes which they have undergone—a very brief outline of the geology of India is necessary to understand the distribution of its minerals.

Geologically and topographically India is divided into three strikingly contrasted regions: the Himalaya mountains sweeping round the north; the peninsula in the south, which is a plateau shelving gradually from west to east; and the great alluvial plains of the Indus, Ganges and Brahmaputra, dividing the Himalayan arcs from the peninsula.

For some 1,600 miles the Himalaya hems in the north, north-west and north-east of India, but considering that it is the longest, widest, and highest mountain range in the world, it is remarkably poor in useful minerals. At each end of the range, where it takes a southward bend, there are projections from the main range, in the Punjab and Assam, where younger rocks of Himalayan type lie upon ancient rocks characteristic of the peninsula, and form the Salt Range and the Shillong plateau. In these younger rocks are the small but rich oilfields of Attock and Digboi, several seams of Tertiary coal (which contribute only two per cent of India's total coal production) and the vast rock-salt deposits of the Salt Range.

Large ore-bodies of chromite are worked in Baluchistan, but other mineral occurrences such as the antimony-ore of Lahaul, the arsenic-ore of Chitral and the sapphires and aquamarines of Kashmir, are small and remotely situated.

The alluvial plains are accumulations of sand and clay some thousands of feet thick, and devoid of minerals, but the clays provide pottery and the most widely used building material of India, sun-dried or burnt brick, and also a useful source of lime in *kunkar*, which is a concretionary carbonate of lime formed in the surface layers of the soil; it serves as a road-metal for light traffic. Salt and gypsum are also worked in the more arid parts of the alluvial plains.

Except for oil, salt and chromite, the peninsula proper produces all the mineral wealth of India. It is composed of the most ancient (Archaean) granites, gneisses and schists, upon which lie great areas of very old (Precambrian) sedimentary rocks, sandstones, shales and limestones.

About a quarter of the peninsula, some 250,000 square miles in area, is comprised in the plateau of the Deccan, a pile of basalt lava-flows (the Deccan Traps) several thousand feet in thickness. They are very much younger than the rocks just mentioned, having been poured out at the beginning of the Tertiary upon the old land-surface formed by these rocks. Except for bauxite, the ore of aluminium, which forms as a superficial decomposition product in patches on some of the higher portions of the plateau where rainfall is heavy, the basalts are barren of useful minerals; they conceal and render inaccessible the underlying rocks, which might otherwise have the same

economic possibilities in minerals as they have where they are exposed.

The schists of the ancient complex do not occupy as large an area as the granites and gneisses, but they, and veins traversing them, are the principal source in India of the ores from which metals are extracted (gold, iron, manganese, copper and chromium) and minerals useful in industry, such as mica, magnesite, graphite, steatite, ilmenite, quartz, kyanite, garnet, zircon, asbestos and monazite. The overlying Precambrian sedimentary rocks yield inexhaustible supplies of unrivalled building materials; the sandstones and limestones are used as freestones and flags, the more altered limestones giving ornamental marbles; some of the shales are used as slates, and the limestones and shales provide the raw materials of India's extensive cement industry.

The peninsula has remained a stable land area since very early geological time, except for slight submergences of its margin beneath the sea, but in its north-eastern portion a system of four great valleys was formed by subsidences along faults, analogous to the rift-valleys of Central Africa. In these valleys fresh-water deposits including beds of coal were laid down, which now produce 98 per cent of the coal of India. These deposits, known as the Gondwanas, range in geological age through the Permian, Triassic and Jurassic, and are in places covered by the later outpourings of basalt lava, the Deccan Traps.

India's Place in World Mineral Economics

The value of India's mineral production in 1938 was £ 25,477,116 or Rs 34,13,93,365. Of this

total five minerals, coal, manganese, gold, mica¹ and petroleum (mineral oil), each contributed over a million sterling.

To these may be added iron; the value of the ore is low compared with that of the pig-iron manufactured from it, as the ore is abundant and very cheaply mined. In 1938 over a quarter of a million tons of ore were exported and of pig-iron over half a million tons, 2,743,675 tons of ore being produced and 1,539,889 tons of smelted iron.

The aggregate value of the building materials quarried in India is very great, but accurate statistics are impossible to obtain as the industry is ubiquitous. Most of India's 800,000 towns and villages have their tanks from which mud is dug to make waterpots and sun-dried bricks; and where stone is obtainable, outside the alluvial plains, small quarries are literally innumerable, though large permanent quarries are scarce, and tend to be temporary, according to the local demands of public works.

Coal is the most important mineral product of India, and as a coal producer India stands ninth among the countries of the world, with two per cent of the total, and in the British Empire second to Great Britain. In 1938 the raisings were 28½ million tons valued at nearly eight millions sterling.

Of the world's producers of manganese ore in peace-time India comes second to Russia and accounts for one-third of the world's output. In 1938, 967,929 tons were quarried, of a value of

¹ Owing to defective collection of statistics, the value of mica mined is given more correctly by the value of the exports, which exceeded one million sterling, than by the output figures of £845,175 (see Table on p. 32).

nearly three millions sterling. India's production of gold, of a value of £2,274,283 is only two per cent of the world's total, but it comes entirely from the one reef of Kolar in Mysore, the workings on which are among the deepest in the world. India stands seventh or eighth in the gold-producing countries of the world.

In mica India may be said to dominate the world's markets, as about three-quarters of the world's production of high-grade mica comes from Hazaribagh in Bihar and Nellore in Madras, the production in 1938 being valued at £845,175.

The petroleum output of India (87 million gallons in 1938) is only 0.10 per cent of world production, India standing nineteenth on the list of mineral oil-producing countries. The value of the output in 1938 was £1,234,563.

India has the almost exclusive production of two minerals, ilmenite and monazite, although the actual values of the output are not great, £115,406 and £17,440 respectively, in 1938.

There is no doubt that when the statistics for the war years are released, the production of most minerals will be found to have greatly increased.

Labour

According to statistics 413,458 persons were employed in 1938 in mines in India from which reliable returns were available, but this does not include a host of small quarries from which returns were not made, nor the great force of part-time and casual labour in the indigenous pottery and building materials trades. The coal-mining industry is by far the greatest, employing 226,887 persons, followed at a long distance by

salt with 57,665 persons, manganese-ore 34,080, mica 31,066, gold 24,200, iron-ore 19,577, petroleum 7,655 and copper-ore, diamonds, magnesite and monazite-ilmenite-zircon with a thousand to five thousand each. The iron and steel industry is not included in these figures, apart from mining ore.

Coal

The coalfields of India are of two ages, Lower Gondwana (Permian) and Tertiary, which supply 98 and 2 per cent of the output respectively.

Coal-mining is India's most important mineral industry, employing about 227,000 persons for an output of 28,342,906 tons in 1938, with an estimated value of Rs. 10,64,23,835 or £7,942,077. India comes ninth on the list of the world's coal-producing countries, with 2 per cent of the total.

The railways are the principal customers, taking about one-third of the output, followed by the iron and steel industry, which takes two and a half million tons annually, from which a recovery of about 71 per cent of hard coke is obtained. The remainder is distributed among factories, power-stations and smaller industrial concerns and the shipping industry. The domestic consumption of India has been estimated at about two million tons annually, which is negligible for a population of 380 million, but efforts are being made to popularize soft coke as a domestic fuel.

Reserves of good quality coal, in seams of more than four feet in thickness, an ash content of 16 per cent or less on a moisture-free basis, and lying within 2,000 feet of the surface, are now 4,850 million tons. Of this about 1,400 million tons are coking coal.

Coal was discovered in the Raniganj field, about 130 miles from Calcutta, in 1774, but mining did not really start until 1814. From that date until the railway reached Raniganj in 1855, coal was boated to Calcutta down the Damoder river. By the beginning of this century other fields, especially Jharia, had been opened out by railway connexions.

The coalfields of Bihar and Bengal account for about nine-tenths of India's output—Jharia, Raniganj, Bokaro, Giridih and Karanpura being the principal ones in order of output.

The Jharia field is the main source of coking coal of metallurgical quality. It contains 18 workable seams of a total thickness of 200 feet, which are used for steam-raising as well.

In the Raniganj field the coals of the lower measures (Barakar) are low volatile, high fixed carbon, the better of which form hard coke; those of the upper measures (Raniganj) are mostly high volatile coals, and are non-coking with the exception of two seams. In the upper measures there are six seams aggregating 50 feet of coal, two of them 18 feet thick, and in the lower measures twelve workable seams, with not less than four feet of coal in each. All the Raniganj coals are good steam-raisers.

The Bokaro field is remarkable for the great thickness of its seams, up to a maximum of 126 feet of solid coal, which enables them to be won in vast open quarries. Two of the seams are of good coking quality. The Giridih field, though small, produces the best metallurgical coke in India. The large Karanpura field has recently been opened out. It also has remarkably thick

seams up to a maximum of 90 feet, and some of its coal yields coke, if mixed with certain Jharia coals.

Outside Bihar and Orissa there are important coalfields in the Pench Valley of the Central Provinces, in the Korea and Talchir States of the Eastern States Agency and at Kothagudium and Tandur in Hyderabad State. The remaining coalfields have each outputs of less than 300,000 tons annually.

Iron and Steel

India's resources in high-grade iron-ore are perhaps the greatest in the world, with the possible exception of Brazil. Three thousand million tons of ore, averaging not less than 60 per cent iron, have been estimated by the Geological Survey of India, and this calculation includes only the more accessible deposits in Singhbhum district, Bihar, and the adjoining Eastern States. There are besides another six hundred million tons at least in the Bastar State, and there are large deposits in the Chanda and Drug districts of the Central Provinces and in the Bababudan Hills in Mysore.

As these reserves are much larger than the amount of coking coal available, it appears that India can spare large quantities for export. India is now the second largest producer of iron and steel in the British Empire, exceeded by the United Kingdom only.

The ore-bodies give rise to steep ridges, rising 1,500 feet or more above the plains, from which quarrying is an easy matter, as they can be worked in benches, by gangs of unskilled labour, and loaded into trucks with hardly any selection.

The iron content is usually about 64 per cent, phosphorus from 0.03 to 0.08 per cent, but may be

as high as 0.15 per cent, and sulphur is usually below 0.03 per cent. At, for instance, Tata's Noamundi Mine, the average day's run of ore is 62 per cent iron, and they can arrange consignments to the works of up to 69 per cent iron, containing only 1 per cent of impurities, the theoretical composition of pure haematite being 70 per cent iron and 30 per cent oxygen. Ore containing less than 60 per cent iron is not used by the two large companies.

The production of iron-ore is approaching three million tons per annum, nearly all from Singhbhum and the Keonjhar and Mayurbhanj States.

Between 1830 and 1875 many attempts were made in India to produce iron on a commercial scale, using charcoal fuel, but economically all were failures, in spite of the genius of J. M. Heath, who resigned his appointment with the East India Company to carry on the industry in South India, and was the first to use manganese in steel production. In 1875 trials were made of Indian coke at Kulti, near Raniganj, and iron was successfully smelted by modern methods. The Tata Iron and Steel Co. Ltd commenced production in 1911-12 at Jamshedpur, followed ten years later by the Indian Iron and Steel Co. Ltd near Asansol, and the Mysore Iron and Steel Works at Bhadravati.

The production of pig-iron in 1938 was 988,345 tons by the Tata Iron and Steel Co. Ltd and 540,277 tons by the Indian Iron and Steel Co. Ltd. The production of steel from this was 693,064 tons. There was also a production of 11,267 tons of charcoal pig-iron by the Mysore Iron and Steel Works, using the ore of the Bababudan Hills, which runs 55 to 64 per cent iron.

Manganese-ore

Deposits of manganese-ore are widely distributed in the ancient rocks of peninsular India, and since the beginning of the century India has shared the position of the world's chief producer with Russia, sometimes one leading, sometimes the other.

As the demand for manganese is governed by its uses in the manufacture of steel, it is subject to great vicissitudes as the heavy industries rise and fall with the calls from trade and the manufacture of munitions. This was particularly the case during the world trade slump in the years 1930-3, when India's production dropped to a little over one-fifth of that of five years previous, with a value of less than one-nineteenth. Recently, however, there has been a recovery, with the result that the production of India, for the first time in the history of the industry, exceeded one million tons in 1937.

The United Kingdom, Japan, the United States, France and Belgium have been the principal customers, and there is an internal demand for over 60,000 tons annually in the steel industry. As well as in the steel industry, manganese-ores are largely used in the chemical and ceramic industries, in dry batteries, in colouring and decolouring glass, and in the preparation of disinfectants.

The principal areas in which manganese-ore is mined are the Balaghat, Nagpur and Bhandara districts in the Central Provinces, Sandur State and Vizagapatam in Madras, the Panch Mahals district in Bombay, Singhbhum district in Bihar and the adjoining States of Keonjhar and Bonai.

The ores tend to form hills, so that the quarrying is easily and cheaply carried out by gangs of unskilled labour. Many of the ore-bodies are of great size. The main disability under which the industry labours is the distance of the larger deposits from the nearest seaports.

Gold and Silver

In prehistoric times gold was mined in quartz lodes in the most primitive manner, but with such pertinacity that hardly an auriferous lode can be found which has not been cleaned out to a depth at which water defeated the ancient miners. Long after lode mining had ceased, gold washing from the sands of many of the rivers was carried on, and still persists to an insignificant extent as a spare-time occupation after rain, yielding a few annas a day to the worker. Gold is, in fact, more widely distributed throughout India than any other useful mineral with the exception of iron-ore, but in such small proportion that the annual output from alluvial washing may be taken as twenty to forty ounces, against the steady production from the five mines of the Kolar goldfield in Mysore of about 330,000 ounces, all from the Champion lode. The lode averages three to four feet in thickness and is payable along a length of over four miles. Two of these mines, Champion Reef and Ooregum, are among the deepest in the world, well over 8,000 feet, and the gold contents in the lode are understood to continue to a depth of 10,000 feet without diminution.

Mining in the Kolar goldfield started in 1880, and after initial difficulties which were surmounted by the persistence of the consulting engineers,

Messrs. John Taylor and Sons, who manage all five companies, the field has been one of the most steadily profitable in the history of gold mining, largely owing to good management, for the ore is not of specially high grade.

Other gold-mining concerns have worked in the Dharwar district, Bombay, Anantapur district and the Wynaad (Nilgiris), Madras and in the Nizam's Dominions (Hyderabad). In the Anantapur mines gold to the value of three-quarters of a million sterling was produced, and from the Hutti mine in Hyderabad over a million sterling.

Some 25,000 ounces of silver are annually recovered in refining the Kolar gold, other than which there is no silver production in India.

Petroleum (Mineral Oil)

Petroleum has been successfully exploited in the Tertiary rocks at the extreme ends of the great plain of Indo-Gangetic alluvium, at Digboi in Assam and in the Attock district, Punjab, south-west of Rawalpindi, at both of which places there are refineries, producing petrol, kerosene, Diesel and lubricating oils, waxes, greases and many other products.

The Digboi oil is particularly rich in waxes. South of Digboi, in the Surma Valley of Cachar, are two other fields—Badarpur, which has proved disappointing, and Masimpur, which is still in the initial stages. In Attock, petroleum is being produced from two fields, eight miles apart, Khaur and Dhulian, the latter having recently been most successful, after great perseverance in the face of difficulties at Khaur. Other fields are being pros-

pected. In 1938 the production of Digboi was 66 million gallons and of Attock 21·1 million gallons in round figures, the total value being estimated at £1,234,563.

Mica

India is responsible for three-quarters of the world's production of sheet mica, and of this probably 80 per cent comes from the mica belt of Bihar and 20 per cent from the Nellore district of Madras. The mica belt of Bihar is some 60 miles long by 12 to 14 miles wide, and runs in a general east and west direction along the junctions of the Gaya, Hazaribagh and Monghyr districts. There is also a small production from Rajputana and the Nilgiris. Both in Bihar and in Nellore the mica occurs in pegmatites, which are nearly always lenticular, and may reach a maximum length of 1,500 feet, with thicknesses up to 100 feet. They are aggregates of quartz, felspar and mica, with accessory minerals such as tourmaline, garnet, apatite and beryl. The beryl is not of gem (emerald or aquamarine) quality, but has been worked to a small extent in Ajmer-Merwara as a by-product for the extraction of the metal beryllium, used in copper alloys. In mining the pegmatites it has been found that the mica averages about six per cent of the total rock excavated, and only about one per cent represents material of saleable quality after dressing.

The 'books', or crystals of mica, are occasionally of large sizes, up to 15 feet across having been recorded. Mica should of course be perfectly water-clear in thin sheets, but in thick sheets it has a characteristic colour, that of the

Bihar mica being red (hence the trade name 'Bengal ruby') and that of Nellore greenish.

The methods of mining are usually primitive in the extreme, merely consisting of burrowing along the vein from one 'book' to another; on the other hand the dressing and splitting of mica, which is done on the Bihar mica belt by aboriginal women and children, is carried out with great skill. The excellence of this craft is no doubt contributory to the pre-eminence of the Indian mica industry, for every year there is an import of some tons of foreign block mica into India for splitting, to be exported again in the form of fine splittings, one-thousandth of an inch being the usual thickness of the film. The wastage from the splitting is hot-pressed with shellac into 'micanite' sheets, or sold as powder.

Building Materials

The building material for ordinary village uses in the Indian plains is essentially mud or silt, either used by itself or in the form of sun-dried or kiln-fired brick, set in mud mortar. Where stone is available it is used, often set in mud-mortar or in lime made from *kankar*, the concentrations of carbonate of lime found in the alluvium of the plains, or from the deposits of excellent limestone in which peninsular India is rich. Every town has its associated brick-fields and there is a large internal trade in lime, burnt in localities favourably situated with regard to limestone and fuel.

The building-stones of India are justly famed through the magnificent Buddhist and Moslem architecture of northern India and the ornate Hindu temples of the peninsula. In northern India the

great expanse of the Vindhya's yields unsurpassable sandstones, in colours ranging from cream or buff to rich reddish-brown, from which gigantic blocks, thin slabs, and monoliths used for rafters and telegraph-poles can be quarried. They are associated with limestones of excellent quality, largely used in the cement industry. The older Makrana marble is found in white, clouded grey and pink tints, and was used in the Taj Mahal at Agra and the Victoria Memorial in Calcutta, and there are many other varieties of white and coloured marble in Rajputana, one of which was used in the elaborately carved Jain temples of Dilwara. The temple architecture of southern India is largely carried out in granite and allied crystalline rocks and in basalt or epidiorite so hard and tough that the intricacy of the carving in it is well-nigh incredible. Both the sandstones and the granites are much utilized in great public works, such as bridges and dams.

Amongst other well-known building-stones may be mentioned that from Porbandar, largely used in Bombay and Karachi, a soft foraminiferal limestone of subrecent age, and the limestone of Shahabad in Hyderabad, which produces excellent flagstones and is also used for cement manufacture. Similar flagstones are quarried at Nimbahera in Rajputana. Much limestone is used as a flux in iron-smelting, and in sugar refineries. Slates are quarried near Dharmasala in the Kangra district, Punjab, at Kund near Rewari in the Gurgaon district, Punjab, and near Monghyr in Bihar.

Cement

The manufacture of cement started in India on a large scale in 1914, and since then the progress of the industry has been rapid. At present there are about 20 companies in operation, with a capacity of well over a million tons annually. In most cases the limestone used belongs to the Vindhya and can be so selected as to contain a considerable amount of the clay constituent required, the remainder, if any, being made up from shales associated with the limestone, or from local surface silts. The small amount of gypsum necessary, 2 to 3 per cent, comes from Khewra in the Punjab, or from Jodhpur State. Indian cement is made in several grades and is of such high quality that it has ousted imported cement. With the abundance of bauxite in India, there is likely to be an increasing production of aluminous rapid-hardening cement. India's great reserves of magnesite will also be invaluable in the manufacture of special cements.

Salt

Salt is a most important mineral in the internal economy of India, the production amounting to about one and a half million tons annually. In Bombay and Madras provinces and Sind it is recovered from the evaporation of sea-water; in northern India its source is the beds of dried-up lakes in Rajputana, and the vast deposits of rock-salt in the Salt Range and at Kohat. There was, in addition, an import in peace-time of between three and four hundred thousand tons annually, largely from Aden and Red Sea ports, to supply Bengal and the neighbouring areas.

Saltpetre

Saltpetre is extracted from the surface of the ground in some of the densely populated and dry districts of the Punjab, United Provinces and Bihar. Exact figures of production are not available but the peace-time export was about eight thousand tons annually, to which has to be added a few hundred tons used in India as fertilizer. The export value was about £10 a ton.

Copper, Lead, Zinc, Tin

India is singularly poor in deposits of the base metals—tin, lead, zinc and copper. The tin occurrences in the mica belt of Bihar are of no practical importance. There are numerous ancient workings for lead, and one for zinc, a very large open quarry at Zawar in Rajputana, which is now being developed.

Old copper workings are still more widespread, usually of the sulphide—copper pyrites; the ore is seldom found in India in true lodes, but is disseminated or locally concentrated in systems of small fissures in the rocks. There is only one area in which copper mining has been conducted in modern times, the copper belt of Singhbhum, Bihar. This extends for 80 miles, in a curve marked by many ancient workings. Various companies have worked on the belt since the beginning of this century, and the concern which now has the leases, the Indian Copper Corporation Ltd, has been smelting since 1929, with great success. The ore reserves at the end of 1938 amounted to 852,300 short tons, with an average content of 2.88 per cent of copper. In that year the production of refined copper was 5,330 long

tons, nearly all of which is converted into 'yellow metal' in the rolling mill and sold in India.

Ilmenite, Monazite and Zircon

It is convenient to consider these three minerals together, as they are all found (with rutile, garnet, etc.) concentrated by wave action in the beach sands of Travancore, for about a hundred miles along the coast near Cape Comorin, in the extreme south of India. They are recovered by washing and magnetic separation.

The industry started in 1911, on monazite alone, which was then used as a source of thorium for gas mantles, and in 1918 the output reached 2,118 tons. It then practically died out, to one hundred-weight in 1925, presumably owing to the supplanting of incandescent gas lighting by electricity, but in 1938 the recovery of ilmenite attained 252,220 tons and of zircon 1,450 tons.

Ilmenite is the source of titania, a valuable white paint, a filler and used in certain alloys, in electrodes, and in smoke screens. Zircon yields zirconia, a high-grade heat refractory, and also used in the ceramic industry, radio tubes, ammunition primers and electric welding. Concurrently the output of monazite recovered, rising to 5,221 tons in 1938. This is no doubt partly due to cheaper costs, as monazite is now a by-product in the much larger-scale production of ilmenite, but also to the discovery of uses for the cerium in monazite, in such compounds as the spark-producing elements in pocket lighters, the tips of tracer bullets, and in searchlights and ultra-violet lamps, and also as a catalyst in the Fischer-Tropsch synthetic benzene process.

India is now the world's main source of these minerals.

Refractories

As has been mentioned, chromite bricks are made in India for use as furnace linings in steel-work. Silica bricks are manufactured from quartzite quarried in Singhbhum, Bihar, and magnesite bricks from the magnesite of Salem, Madras, also for steel-works requirements.

In 1938 there was an output of 28,000 tons of kyanite from Kharsawan State in the Eastern States Agency. Kyanite and the related minerals sillimanite and andalusite, when highly heated, change into mullite, which is a valuable refractory in the glass, ceramic and electrical industries.

Sillimanite occurs with corundum (see Corundum) in Nongstoin State, Assam, and in Rewa State, but transport is difficult. It has recently been produced in Travancore, where it occurs as a sand.

Graphite is mined in several small deposits scattered about the peninsula. Its principal use is in making refractory crucibles, and also as a pigment, as a lubricant, for electrodes and dynamo brushes, in dry batteries and in pencils.

Zircon, as has been mentioned, is the source of zirconia, a high-grade refractory.

Clays

The usual raw material for domestic pottery in India is silt, dug from the beds of the village tanks and burnt into red or black ware, sometimes coloured with ochre.

Of recent years numerous potteries run on up-to-date lines have arisen all over India, and in

these, tiles, ordinary bricks and fire-bricks, glazed earthenware pipes and sanitary fittings, telegraph insulators, domestic pottery and ornamental ware of good quality are made from ordinary clay, fireclay and china-clay. Some of these clays belong to the Gondwana series of rocks which are the source of India's coal; others are Tertiary, and Recent alluvium.

Special high-temperature bricks of silica, chromite, magnesite and dolomite are made for the requirements of the steel industry for lining furnaces (see Refractories).

China-clay (kaolin) occurs in many small deposits scattered over the peninsula, derived from the decomposition of felspar in granites. As well as its use in white ware and insulators, china-clay is used as a filler in paper and textiles, rubber, paints and soaps, and as a medicine for intestinal complaints.

'Fuller's earth' is a term applied to non-plastic clay which absorbs colouring matter from oil, and is employed for cleansing cloth. It is an ingredient of the edible earths sold in the bazaars, and is used as a filler in soap and paper and in paints. Most of India's requirements comes from Rajputana and Sind, under the name of *Multani matti*, a clay of Tertiary age.

The name 'bentonite' was first applied to clays which absorb large quantities of water and swell considerably, but now embraces types of clay which are gradations into the fuller's earth type. They are used in similar ways to fuller's earth, and in the mud used in rotary drilling in oil wells, to prevent its setting.

Chromite

Chromite is mined in India at Hindubagh and Khanazai in Baluchistan, in the Shimoga, Hassan and Mysore districts of Mysore and west of Chaibasa, Singhbhum district, Bihar, and is known in several other localities. The average production for the three years 1936-7-8 has been 52,000 tons. Most of the chromite is exported, but from the remainder chromite lining bricks of high quality are made for steel-furnaces. Chromium has many uses as an alloy, especially in the stainless steels, and chromates and bichromates are of great importance in the tanning, dyeing and pigment industries.

Gypsum

Gypsum is the bedded variety of the mineral which in its crystalline form is known as selenite and when massive as alabaster. When calcined it is the well-known 'plaster of Paris'.

It is a mineral characteristic of arid conditions, deposited in lagoons and salt lakes, and in India is widely developed in immense quantities, in the Cretaceous beds of Trichinopoly district, Madras, the Eocene of Baluchistan, Punjab, and the North-West Frontier Province, and associated with the salt marl in the Salt Range; sub-Recent deposits are those of Nagaur in Jodhpur and Jamsar in Bikaner.

The production of India has reached 70,000 tons, chiefly from Jhelum district, Punjab, Bikaner and Jodhpur States, and Trichinopoly district, Madras.

Gypsum is extensively used in cements and plasters, as paints and fillers, and as a 'top-dress-

ing' in agriculture; it can also be used as a source of sulphuric acid.

Magnesite

Magnesite production in India is from the 'Chalk Hills' in the Salem district, Madras, where the quantity of the mineral is practically inexhaustible; it occurs in a network of veins over an area of $4\frac{1}{2}$ square miles, standing up to a height of 140 feet in hillocks, from which it is quarried.

It is calcined to form either 'caustic' magnesia at a temperature of about 800°C . or 'dead burnt' at about $1,700^{\circ}\text{C}$. Caustic magnesia is the principal ingredient of 'Sorel' or 'oxychloride' cements, and dead-burnt magnesia is a refractory used to line the furnaces in the basic steel process, for which the bricks made in India are stated to be superior to the Austrian bricks which they have supplanted. There has been an enormous expansion in the use of the metal magnesium since 1938 for very light alloys with aluminium and in incendiary bombs.

The Indian production is about 26,000 tons annually, of which roughly 2,500 tons is from Mysore and the remainder from Salem.

Steatite

This mineral, also known as soapstone, potstone and talc, and in its powdered form as French chalk, is one of the most variously used industrial minerals in multitudinous minor ways, from idols and slate-pencils to switchboards and chemical tanks, and, powdered, from anti-adhesives, polishes and fillers, to face-powders and soaps.

The annual production of India is reported as about 18,500 tons in 1938, the chief sources being Jaipur State, Guntur district in Madras, and Jubbulpore district in the Central Provinces, but there are numerous other minor deposits and probably a good deal of it does not come into the statistics.

Barytes

The two years before the war saw a great increase in the output of Indian barytes, to 15,689 tons in 1937 but only 8,075 tons in 1938; it is quarried chiefly in the Cuddapah district of Madras. Its principal uses are as a basis for paints, as a filler for rubber and linoleum, and for weighting the mud used in rotary drilling for oil.

Bauxite

About 250,000 square miles of India are covered by Deccan Trap, basalt which under suitable climatic conditions decomposes to form laterite. Laterite is a mixture of bauxite (aluminium hydroxide) and ferric hydroxide, with some free silica and titania. When the ferric hydroxide, silica and titania are low enough, the bauxite can be used commercially, as the ore of aluminium.

The production of Indian bauxite is chiefly from Katni in the Jubbulpore district, C.P., and Kaira district, Bombay, and in 1938 was about 15,000 tons, a great increase from previous years. Large deposits are known in Bilaspur and Mandla districts and Sirguja and Jashpur States, C.P., Kolhapur State, Bombay, Ranchi district, Bihar, and Jammu, Kashmir, and there are doubtless others still undiscovered, as bauxite is an ordinary-

looking, clay-like rock, and is often covered by a layer of the ferruginous laterite.

Indian bauxite is at present largely used as a filtering material in petroleum refineries, and for the manufacture of alum. Its utilization for the preparation of aluminium, refractories and abrasives is now being undertaken.

Ochres

Ochres (*geru*) are soft earths of yellow, pink, red, brown and purple colours, which owe their tints to varying amounts of hydrated iron oxide more or less mixed with clay. They are dug on a small scale for local temple and home decoration in innumerable places where rocks containing small amounts of iron outcrop, particularly on the great laterite spreads of the peninsula. They are used in the growing paint industry of India, and could replace imported pigments to a far greater extent than they do, if more attention were paid to washing and preparation at the source, to obtain a more uniform standard.

Wolfram

Wolfram, the ore of the metal tungsten, is mined at one place in India, Degana in Jodhpur State, the production in 1938 being ten tons. Tungsten is an ingredient in high-speed cutting and stainless steels, in 'stellite', an extremely hard cutting agent, as filaments in electric bulbs and radio tubes, and in pigments and dyes.

Asbestos

Asbestos is a name given to several minerals which crystallize in a fibrous form. Its uses are

many, wherever a fibre is required to resist heat, damp and acids, and as a heat insulator. One variety, tremolite, is common in India and is mined in Seraikela States; the sticks of the fibres are sometimes several feet in length, but the fibre is weak and brittle though it may have good insulating and acid-resisting properties. The more valuable variety, chrysotile, is found in short, silky fibres suitable for spinning and weaving but it is scarce, most of the production having been from Cuddapah district, Madras. Mysore is also a producer.

Felspar and Quartz

Felspar and quartz are probably the commonest minerals in nature, being the main constituents of granites, gneisses and most sandstones, but occurrences pure enough for industrial use are rare. Felspar is used in porcelain, and as a glaze and enamel. Most of India's small production is from Ajmer-Merwara and Mysore, in the former area being a by-product of mica and beryl mining in pegmatite veins (see Mica).

Quartz also is obtained as a by-product of mica-mining, and from veins of pure quartz, from crushed sandstone and from sands. Quartz is the basis of glass, but has to be of high purity (especially free from iron) and even grain, and very few sands are suitable. Quartz is used in quantity for the manufacture of silica-bricks for use in the steel-furnaces (see Refractories).

Beryl

Beryl is another by-product of mica mining (see Mica) from pegmatite veins. For the last twelve years there has been a production of beryl

in Ajmer-Merwara, reaching a maximum of 324 tons in 1933, but falling to 17.4 tons in 1938, as the easily collected material became exhausted. During this period Ajmer-Merwara was almost the only world source of commercial beryl, but of recent years the greatly increased demand has been supplied from the U.S.A. and Brazil. Beryl is the source of the metal beryllium, used in copper-beryllium alloys.

The precious varieties of beryl are emerald (deep green) and aquamarine (pale blue-green); of the latter there is a small and irregular production from the Shigar valley, Kashmir.

Garnet

Garnets are common in the schists and gneisses, from which they weather out and collect in hollows, but are seldom free enough from cracks and flaws to be used as gems. An intermittent production of gem material has been recorded in the past from Jaipur and Kishengarh States in Rajputana, depending on the vagaries of the market. 'Crushed garnet' is used as an abrasive, as for instance in sand-paper.

Corundum

There has been a small and variable output of corundum from Salem district in Madras for some years. It is widely distributed in India in small quantities, being picked up from the surface of the ground and sold in the bazaars under the name of *kurand*. It is a valued abrasive, from its great hardness; 'emery' is an impure corundum.

The precious varieties of corundum are ruby and sapphire. The Mogok mines in Burma have

produced most of the world's best rubies, and many great sapphires; also spinel, peridot, iolite, topaz, zircon, chrysoberyl, phenacite, fibrolite and lapis lazuli. In India sapphires and a few rubies are obtained at intervals from Soomjam in the Padar district, Kashmir, but the locality is too high and remote for regular working.

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In a short and popular pamphlet it is impossible to go into full details of India's mineral resources, but those desiring further information may consult the undernoted publications.

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VALUE OF MINERALS, ORES AND METALS PRODUCED
IN INDIA IN 1938

MINERALS, ORES AND METALS	RUPEES	£ (Rs. 13-4)
1. Coal ...	10,64,23,835	7,942,077
2. Steel ...	6,96,52,932	5,197,980
3. Manganese-ore ...	3,92,94,763	2,932,445
4. Iron (pig-iron) ...	3,44,16,000	2,568,358
5. Gold ...	3,04,75,397	2,274,283
6. Petroleum ...	1,65,43,142	1,234,563
7. Mica ...	1,13,25,346	845,175
8. Building materials ...	1,12,65,392	840,701
9. Salt ...	95,18,383	710,327
10. Copper ...	4,02,580	328,551
11. Ferro-manganese ...	24,63,590	183,850
12. Ilmenite ...	15,46,436	115,406
13. Saltpetre ...	11,68,446	87,197
14. Kyanite, etc., refractories ...	7,46,514	55,710
15. Chromite ...	6,82,502	50,933
16. Clays ...	3,76,270	28,080
17. Monazite ...	2,33,700	17,440
18. Gypsum ...	1,71,903	12,829
19. Steatite ...	1,68,580	12,581
20. Magnesite ...	1,60,593	11,984
21. Fuller's earth ...	78,958	5,892
22. Diamonds ...	68,813	5,435
23. Zircon ...	40,737	3,040
24. Silver ...	29,877	2,230
25. Barytes ...	29,312	2,187
26. Ochres ...	28,865	2,154
27. Bauxite ...	25,540	1,906
28. Graphite ...	20,691	1,544
29. Iron-ore (<i>agaria</i>) ...	12,690	947
30. Tungsten-ore (wolfram) ...	9,600	716
31. Asbestos ...	4,482	334
32. Felspar ...	4,335	324
33. Beryl ...	1,597	119
34. Garnet sand ...	600	45
35. Bentonite ...	330	25
36. Corundum ...	250	19
37. Sapphire ...	150	11
38. Apatite ...	119	9
39. Copper-ore ...	101	8
40. Aquamarine ...	14	1
Total ...	34,13,93,365	25,477,116

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INDIAN AFFAIRS**

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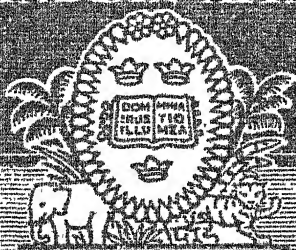
No. 29

As. 6

MALAYA

G. S. RAWLINGS

OXFORD PAMPHLETS
ON INDIAN AFFAIRS



PENINSULAR BRITISH MALAYA

Scale 0 20 40 60 80 100 MILES

Legend:
 [Hatched Box] Crown Colonies
 [Dotted Box] Federated States
 [Solid Line] International Boundary

Regions shown: KEDAH, PERAK, SELANGOR, NEGERI SEMBILAN, MALACCA, JOHORE, KELANTAN, TRINGGANG.

Surrounding areas: CHINA, INDIA, SUMATRA, ANDAMAN ISLANDS, NICOBAR ISLANDS.

12417

ALL

Group 1: 6.010733

773 Wife and Sister

$$A_{\text{max}} = 1.0 \times 10^{-4} \text{ mol/L}$$

CHINA

ॐ नमो भगवते वासुदेवाय

$$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$$

S U M M A R Y

OXFORD PAMPHLETS ON INDIAN AFFAIRS

No. 29

MALAYA

BY

G. S. RAWLINGS



HUMPHREY MILFORD
OXFORD UNIVERSITY PRESS

IN the past seventy years the Malay Peninsula became the most prosperous region in the tropical East. Its population grew from under 300,000 to 5½ millions, its foreign trade rose to more than half that of India, a large number of schools, hospitals and dispensaries were built and excellent communications established. This prosperity depended upon the world demand for rubber and tin, and was made possible by the investment of British and Chinese capital and labour. The economic frontier was still expanding, and there was no communal or political bitterness in Malaya. The conditions under which this prosperity can be restored and maintained are discussed in this pamphlet.

G. S. Rawlings is a member of the Malayan Civil Service. He has studied in Japan, Formosa and South China and served in both Federated and Unfederated Malay States as well as in the Straits Settlements. He has travelled widely in Asia and Malaysia and speaks Malay, Chinese (Amoy dialect) and Japanese. He was in Kota Bharu when the Japanese landed there and observed the invasion from north to south. For the past three years he has been Regional Adviser for Malaya in the Far Eastern Bureau of the British Ministry of Information, New Delhi.

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MALAYA

The Country

MALAYA is generally known for little more than its rubber, its tin, its naval base on Singapore Island, and for being the scene of what Mr Churchill has described as the greatest defeat of British arms in history. It is, however, the wealthiest colonial region of the British Empire and the most prosperous political unit in Asia.

British Malaya, which is the subject of this pamphlet, constitutes the major portion of the Malay Peninsula, 750 miles long, which forms the southernmost limit of Asia. British Malaya and its related British territories of Sarawak, Brunei and British North Borneo, together with the Malay States of Southern Siam, the Netherlands Indies and the Philippine Islands, form that vast collection of colonial territories inhabited by peoples of predominantly Malay stock which has recently become known by the all-embracing name of Malaysia. Throughout this region Malay is the *lingua franca*.

Politically, British Malaya is divided into the Crown Colony of the Straits Settlements (Singapore, with Christmas and the Cocos or Keeling Islands, Penang, Malacca and Labuan off the coast of Borneo), and the nine protected Malay States of Perlis, Kedah, Kelantan, Trengganu, Perak, Selangor, Pahang, Negri Sembilan, Johore on the Peninsula, and Brunei in Borneo, each of which is under its own Malay ruler. Four of these last, Perak, Selangor, Negri Sembilan and Pahang constitute the Federated Malay States. The remainder have in consequence come to be known as the Unfederated States.

The explanation of this multiple division of an area rather smaller than England without Wales is disclosed in very recent history. Though certain coastal localities of the Malay Peninsula have a trade record of over a thousand years, and the main rivers and some of the easily accessible rice areas had been thinly peopled by Malays from Sumatra and elsewhere for centuries, the mainland of the Peninsula was scarcely known to the outer world till the late nineteenth century. It is a fact that until the last few hundred years the interior of the Malay Peninsula was scarcely more than the home of primitive forest peoples.¹ These still survive by expert use of the blowpipe, the bow-and-arrow and spear, and by a shifting form of agriculture, and are almost completely isolated by the jungle from the Malays and other

¹ The negrito Semang, the Sakai, Temiar, Jakun, etc.

invaders of their country. The Malays, Chinese, Indians and Europeans, who constitute 99 per cent of the Malayan population today, are immigrants of recent centuries. While geographically and economically British Malaya is now homogeneous, ethnically the country has become, during the last 70 years, one of the most diverse on the earth.

The Peninsula throughout most of its length has a backbone of mountains, with peaks up to 7,000 feet on the main range, which acts as the watershed of a number of rivers flowing westwards into the Indian Ocean and the Straits of Malacca, and eastwards into the South China Sea. Till the British penetration of the mainland in 1874, the Peninsula was covered almost entirely by equatorial forest, and still, after 70 years' spectacular economic evolution and extensive development of communications, only one-fifth is settled land, while some three-fifths remains as before, dense, creeper-laden, rain-drenched jungle. The balance is mostly land that has been used and later abandoned, e.g. the patches of tall grass-land or secondary jungle created by the shifting agriculture of the forest aborigines, land eroded or exhausted by gambier and tapioca, and land in process of mining or polluted by tin tailings and slime.

Thus Malaya is still a young country with an economic 'frontier' to be pushed back. With an expanding economy, provided she still continues to supply a world market with her principal products, rubber and tin, she can reasonably hope to continue to maintain a happy and prosperous community of mixed peoples living in conditions markedly in advance of those of the neighbouring crowded countries of the Far East.

The chief characteristic of the Malayan climate is its monotonous warmth and humidity. Unlike Burma or Ceylon, where there is a dry belt, Malaya is constantly humid. It rains for a brief spell almost daily. The average minimum night temperature in the inhabited regions is 75 degrees, and the average maximum day temperature 92 degrees. Over 94 degrees is unusual. On the east coast the north-east monsoon creates a wetter and cooler season from November to March with refreshingly chilly nights. Except where careless exploitation has eroded the top-soil the land is lush and green, though bearing few flowers.

Malayan animals, birds, reptiles, fishes and insects have touched the imagination of the people in the country and of many outside it. They are the tiger, the elephant, two species of rhinoceros now practically extinct, which Marco Polo took to be the unicorn, 'not in the least like what our stories tell us' but abiding 'in mire and mud' and 'a passing ugly beast to look upon', the formidable *selandang*, largest and handsomest of all wild cattle, various monkeys, in

particular the *berok*, trained by the Malay peasant to twist off and throw down the young coconuts, and the various *wah wah*, the gibbons whose early morning call of 'wah wah' in piercing crescendo in the hill forests is unforgettable, the otter and *pelandok*, the exquisite little mouse-deer celebrated in Malay folk-tales, the flying foxes; the hornbills, peacocks and argus pheasants; the pythons, hamadryads and crocodiles, the *biawak*—great monitor lizards up to four feet and more in length—and the little household 'chechak' lizards, which live in numbers on the walls and ceilings of the houses; turtles, poisonous sea-snakes, the sharks and sting rays, the poison-spined fish *ikan sembilang*; *koringga*, the fierce red ants that pugnaciously drop on the unwary to inflict a sharp bite, the termites, the hornets, the cicadas, innumerable leeches, and last but not of least significance, the mosquito.

Scarcity of livestock is one of the problems of Malayan economy, there being little grazing land. Up to the Japanese invasion, the country depended largely on imported milk and meat though cattle, water buffaloes (mostly used as draught animals), goats and poultry were to be found everywhere, and, in the limited regions where the Chinese had access to the land, pigs were reared. There were under 800 horses in the entire country. Though horse transport has remained general in Sumatra and Java, petrol vehicles had completely ousted the horse in Malaya.

The mineral wealth of Malaya lies mainly in tin, of which, before the war, Malaya was the world's greatest individual producer, her output sometimes approaching 40 per cent of the world's production. The export duty on tin is always a major source of Malayan revenue. Bauxite, wolfram, iron and manganese ore and phosphate of lime, kaolin, coal, gold and arsenical ores are also found in varying quantities. Malaya's agricultural produce is primarily rubber, rice and copra. Food-crop production before the war was small and foodstuffs were mainly imported. The significant features of Malayan economy are described in more detail later.

In communications, public works and services, Malayan development eclipsed that of most other territories of the Far East. The road and rail systems bore comparison with those of any country in the world; coastal and internal steamship services were excellent; telegraph, telephone and postal facilities were extremely satisfactory. The country had serviceable if unpretentious buildings, controlled urban development, well constructed streets and bridges, and considerable reclamation and water works; electricity was general except in the smallest towns, and the map was dotted with airfields. In anti-malarial measures Malaya had always led

the world, and her measures for the prevention of disease were efficient. Hospital treatment was very cheap everywhere and free where necessary. The urban population ran little risk of malaria, the dysenteries, small-pox, cholera, typhoid or plague. The rural and riverine areas were increasingly well served by travelling dispensaries. The high incidence of hookworm, venereal disease and malnutrition, typical of the tropical East, was receiving increasingly intelligent and effective attention. Child welfare and maternity work was advancing. In these directions it was noticeable that Malaya compared extremely favourably with her large continental neighbours, India and China.

In Malaya there was no dust, normally there were no beggars, the *baksheesh* posture was absent, Malayan trains were clean, comfortable and sanitary and had bedding in their 1st- and 2nd-class sleeping berths, the Rest Houses were adequately staffed and provided bedding and meals. In the towns and bigger villages piped water and electric light were usual. Education facilities were general. Despite the tendency towards centralization of authority and the increased 'paper administration' of recent years, the Malayan district official was in fairly close touch with the people and the land and the districts were small and efficiently staffed. This steadily rising standard of life was largely accounted for by Malaya's immunity from overcrowding and great natural wealth.

Malaya had no national unity before the coming of the British and has been slow in developing it since. She had not yet become a single country in the accepted political sense when she was invaded by the Japanese.

The history of Malaya for the past hundred years has been the history of the British connexion. Progress during this period has been spectacular: but this rapid, almost irresistible, advance has brought its own problems, such for instance as the results of Chinese immigration and of the encouragement of an economy too dependent for its prosperity on the world price of two commodities, rubber and tin.

An observer regarding the territory in 1941—just before the Japanese invasion—might have made the following points:

(i) Malaya as she appeared then was a tropical region of immense wealth and little historical background and tradition, developed in a little over a century by energetic immigrant peoples (primarily the British and the Chinese) and enjoying a period of unique prosperity and tranquillity.

(ii) Malaya was one of the best-humoured parts of the British Empire. There was no tension. This was largely because the land

was still underpopulated. There was still room for enterprise; the economic frontier had not yet been reached.

(iii) If ever this frontier is reached there is a risk that Malayan affairs may present a problem of the first magnitude. It has been said that Malaya is a Palestine in the making. It is divided almost equally between a happy-go-lucky indigenous Malaya population and a thrifty enterprising Chinese population. At present there is subsistence for both. If ever the subsistence should be less abundant they may clash in a struggle for existence.

(iv) Singapore and Penang, and the rubber plantations in the hinterland, were a creation of Western and Chinese enterprise. These have flourished under the British rule of law. Malaya has been a region where a nineteenth-century type of economic activity achieved full scope, and the greater part of the wealth thus created has, under the impulses of twentieth-century ideas, been used for the creation of one of the most comprehensive systems of social services found in the East.

The People

The estimated population of British Malaya in 1941 was five and a half millions, of which 2,379,211 or 43 per cent were Chinese, 2,278,588 or 41 per cent were Malays, 750,000 or 13 per cent were Indians, 19,000 or 0.33 per cent Europeans, 30,000 or 0.5 per cent Eurasians and 1 per cent others. Of the Chinese population roughly 30 per cent are Malaya-born, and of the balance most spend only a few years in the country. Of the Indians probably a third regard Malaya as their home.

The Malays

The Malays are the principal non-transient element of the population, their community being bound to the country and devoid of outside ties and loyalties. They are predominantly the rural population and are in noticeable strength in the States where Western influence has been least felt, notably Kelantan and Trengganu and Brunei, which can be regarded as purely Malay States. There the Malays, the indigenous community, are the dominant one.

Isabella Bird, one of the earliest European observers to travel in the Peninsula, remarked of the Malays of 1879: 'The Malays undoubtedly must be numbered among civilized peoples. They live in houses more or less tasteful and secluded. They are well-clothed . . . ; they are a settled and agricultural people; they are skilful in some of the arts . . . ; and they have possessed for centuries systems of government and codes of land and maritime laws which, in theory at least, show a considerable degree of enlighten-

ment.¹ The Malays are no undeveloped primitive folk; but they are a people whose further satisfactory development and growth are somewhat in doubt.

Observers over a period of centuries are agreed upon certain aspects of the Malay character, more particularly their courteousness. D'Ailbuquerque, writing in 1511 of the Menangkabau Malays of Sumatra who have so extensively populated the Negri Sembilan, remarks that 'these people are of good manners and truthful character', and that 'they walk about always well dressed, clad in their silken *bajus* and wearing the *Krisse*'; and of the Malacca Malays, though he thought them 'malicious, generally of little truth' he stated unequivocally, 'the Malays are proud men by nature', 'the Malays are gallant men, they wear good clothing'. Duarte Barbosa, the Portuguese writer of the early sixteenth century, mentions the Malacca Malays as 'very polished people, gentlemen, musical, gallant, and well-proportioned'. Writing of Malacca in 1580, Jan Huygen van Linschoten remarks: 'The Malays, both men and women, are very courteous and are reckoned the most skilful in the world in compliments.' And Drake in 1577 'found great courtesie and honourable entertainment' in Sumatra and found the Malays 'courteous to strangers whereof we had experience in sundry ways'. Thomas Candish in 1588 remarked upon another characteristic, that the Malays are 'singularly valiant in any action they undertake and wonderfully at commandment and fear of their King'. Nieuhoff in 1662 thought the Patani Malays 'very proud and conceited' but 'very affable and civil in conversation'.

British officials, from the earliest times to the present, have tended to like the Malay for his amiable qualities and to observe his weaknesses with sympathy. Sir Stamford Raffles in 1811 found them 'strikingly alive to a sense of shame' and Lady Raffles thought the Malay character 'congenial to British minds'. McNair, Chief Commissioner, Perak in 1878 emphasized the Malays' sense of dignity and how they resented overbearing behaviour and lost respect for inconsiderate Europeans.

Sir Frank Swettenham's verdict of 1895 upon the Malay is worth quoting at length: 'His disposition is generally kindly; his manners are polite and easy; never cringing, he is reserved with strangers and suspicious though he does not show it. He is courageous and trustworthy in the discharge of an undertaking but he is extravagant, fond of borrowing money, and very slow in repaying it. He is a good talker, speaks in parables, quotes proverbs and wise saws, has a strong sense of humour and is very

¹ Isabella Bird, *The Golden Chersonese* (1883), p. 19.

fond of a good joke. He takes an interest in the affairs of his neighbours and is consequently a gossip. He is a Muslim and a fatalist . . . he is also very superstitious. . . . He is by nature a sportsman, . . . is a skilful fisherman and thoroughly at home in a boat. Of all things he is conservative to a degree . . . fond of his country and his people, venerates his ancient customs and traditions, fears his Rajah, and has a proper respect for constituted authority.'

Sir Hugh Clifford, a great Malayan Governor who spent his youth as a civil service cadet in very close contact with the Malays, wrote that they 'dislike toil exceedingly' but he had convincing experience himself to prove that 'at the invitation of one who is their friend they will toil unremittingly without any thought of reward'.

The familiar charge against the Malay of the Peninsula is of course that he is lazy and utterly improvident. He is certainly no go-getter. But those who know him will deny that he is as indolent as is popularly supposed. Indeed, the more one observes the Malay the more one is convinced that to dismiss him as just lazy is to be guilty of lazy thinking. Intelligent, sympathetic investigation of the circumstances of this people is essential if conclusions of value in regard to them are to be reached.

The Malay's values differ slightly from those of most other peoples. He will work with a will where the task is congenial or for someone he respects and wishes to serve. But, unlike almost everyone else in the modern world, he is not obsessed with the need to exert himself more than will provide for his quite modest needs. He is influenced in this outlook by the easy circumstances of his background and of the past seventy years. His basic needs have always been simple and easily supplied. Also, the religious teaching of his *ulamas* has long persuaded him, when he thinks at all, to look forward to the next world and leave it to the *kafirs* (infidels) to be ambitious in this one. No responsible and understanding agency has intervened with sustained enough effort to jolt the Malay into visualizing where he and his kind are heading. Neither education nor propaganda, for instance, has yet been exerted to the extent that it could be to this end.

It is noticeable that where there is some pressure of population upon the land the Malays are markedly more industrious. One has only to go to Java or to the Menangkabau region of Sumatra to see how hard-working peoples of Malay stock can be. Again, though there are no Malay coolies on the west coast where the Chinese and Indians are present, all labourers are Malays in Kelantan and Trengganu where the foreigner has not such a hold. Nevertheless it is undeniable that the role of the Malay has hitherto been that of 'an independent peasant-proprietor, filling in

the lull in his farming activities with village industries, with no wish to govern himself, extraordinarily appreciative of good government even by an alien race, taking life not too seriously, a hero in big disasters, a child in his pleasures, enjoying above all things the sports of the chase and competitions of one *kampung* against another in kite-flying, top-throwing and such-like pastimes, ending in feasts in which the women have their opportunity for vying with each other in cookery. . . . Such is the real Malay'.¹

Had the Malay's philosophy been that of the Chinese or Indian shopkeeper or the average Westerner his position would not have weakened in relation to these competitors with him for survival in his country. It was the impossibility in the 1880's of developing the country with Malay labour that led to the inflow of alien immigrants. And the early administrators are not to be blamed. They had few alternatives. They could deny the world the Peninsula's economic resources, force the Malays to develop these resources by *corvée* and other systems of coercion, indigenous or otherwise, such as the Dutch employed, or let in outsiders to develop the country. They chose the last, the course that suited all parties best at the time. The unhappy truth for the Malay is that the world has not waited for him hitherto, and there seems little reason to suppose that it will henceforth; the question is whether he can be accommodated to its pace. It is a momentous problem as the very survival of an excellent folk depends upon it.

Lastly let us appreciate what is perhaps the Malay's most endearing quality. As Clifford has put it, 'he takes his place in any society quite naturally with comfort to both himself and his neighbours, since he is not forever mentally comparing his own position with that of others'. The Malay exhibits always quiet self-respect and confidence in himself. There is no conceit about him. As Owen Rutter says, 'the Malay never cringes. He will always meet you on your own ground, which makes him the pleasant fellow he is'.

The Malays have little sense of Malayan nationality. They readily assimilate immigrants of Malaysian stock. Their loyalties are to their local states and chiefs and their aversion is directed to the Chinese and Indians whom they are inclined to disdain. None would question the worthiness of the Malay as a human being or the desirability of his survival, but many despair of his holding his own in the modern world against the Chinese and other outsiders who are fast swamping him in his own country.

¹ G. A. de C. de Moubray, *Matriarchy in the Malay Peninsula and Neighbouring Countries* (1931), p. 199.

The Malays have a negligible place in the retail trade of the Peninsula, which is in the hands of the Chinese and Indians. They are on the land, in Government service of all grades, and show a particular flair as motor-car drivers, house-boys, policemen and fishermen.

The Chinese

The other great community in Malaya is the Chinese. They have been the greatest contributors to Malaya's development and present wealth and have largely established themselves in Malaya in less than a century, though they had been visitors from ancient times. They have always been preponderantly a male community of transients. Their pioneer merchants and rovers of earlier centuries were unaccompanied by their womenfolk, and those of them who settled tended to take to themselves the women of the country. True Chinese women did not begin to come to Malaya before the 1830's, and one Chinese tribe, the Hailams, did not tolerate emigration of its women from their homeland till as late as the 1920's. As a consequence, many Malayan Chinese are of mixed blood, and the preponderance of males over females has been one of the community's greatest defects. Though the ratio has improved steadily during the past few decades, there were still three Chinese males to every female as late as 1939. Since the unrestricted emigration of Chinese women to Malaya the Chinese have tended to remain racially apart, and intermarriage with Malays has become rare. When the Japanese invaded Malaya fully two-thirds of the Chinese community there were China-born transients, most of whom had their families in China and intended to return there. Most of the remainder, though culturally Chinese, were inclined to regard Malaya as their country.

Nearly 150 years ago Francis Light, the founder of Penang, summed up the Chinese as 'the only people in the East from whom revenues can be raised without expense and extraordinary effort. They are indefatigable in the pursuit of money, and like Europeans, spend it on the gratification of their appetites'. Isabella Bird, in 1879, observed the Chinese in Malaya as 'at home there as everywhere; yellow, lean, smooth-shaven, keen, industrious, self-reliant, sober, mercenary, reliable, mysterious, opium-smoking, gambling, hugging clan ties, forming no others, and managing their own matters even to the post and money-order offices, through which they are constantly sending money to the interior of China'.¹ Except perhaps that fewer of them are lean and that opium-smoking is being discouraged, the description is valid today.

¹ *The Golden Chersonese*, p. 279.

The Malayan Chinese are mostly Hokkiens, Cantonese, Teo Chews, Hok Chius, Hok Chias, Khehs and Hailams—all from South China—and they speak widely differing dialects and have no common tongue, though Mandarin has recently been taught in their schools. Most Chinese permanent residents speak some Malay and many Malaya-born Chinese speak Malay to the exclusion of their Chinese dialect. In the matter of clothes and habits this community, until 20 years ago, largely wore the dress and followed the customs of their adopted country and considered themselves superior to the transient Chinese, a tendency that has been somewhat halted by the invidious 'pro-Malay' policy of the Peninsula administration and the Kuomintang's potent Chinese nationalistic propaganda to the Overseas-Chinese.

The Malayan Chinese and Indians owe their position in the Peninsula to their own industry and to the protection of British law. The Malayan Chinese are mostly immigrant coolies or descendants of such coolies from South China, brought over on a credit-ticket system scornfully called by the Chinese 'the pig trade'. The majority of these coolies make their modest pile and return to China, but a proportion, especially the richer ones, take root and come to regard Malaya as their home and remain. There is normally a regular flow of 200,000 or more Chinese labourers in and out of Malaya annually.

The Chinese are mainly an urban community, and Singapore, Penang, Kuala Lumpur, Seremban, Ipoh and Taiping are largely Chinese-populated towns. The Chinese provide the labour of the tin-mining industry and dominate the retail trade of the Peninsula and, but for the Malay Reservations Enactment of the F.M.S. under which most agricultural land is reserved to the Malays, they would doubtless have overrun the countryside as well. The community has produced its influential and public-spirited men, but in the main it has been characteristic of the Malayan Chinese hitherto to be content with the freedom to trade and exploit the mineral wealth of the Peninsula and not to press very vigorously for a larger share in the political control of the country. They have not in any case been a united community and have tended to split into clan and sectional interests and Secret Societies (operating exclusively for or against Chinese).

The Chinese contribution to the welfare of Malaya and their place in the society of Malayan peoples deserve more mention than space in this pamphlet permits.

The Indians

With the exception of the large number of clerks in Government service and the predominance of Indians in the legal profession the Indians in Malaya are not a very influential or stable community, and they have not the place in the community that their number might be taken to imply. About five-sixths are Tamils. The rest are mostly Telugus, Malayalis, Sikhs and other Punjabis. Most are illiterate labourers. There is also a strong community of money-lending Chettiers, who until the arrival of the Japanese had the Malay cultivators of the west coast in their pocket. The bulk of the Indian population were rubber tappers whose average stay in Malaya was under three years. There was an increasing tendency for these to return to Malaya again and again, and on some of the older estates the third generation born on the estate were to be found working. The life of these immigrant coolies in Malaya was very closely regulated by labour legislation approved by the Government of India.

Europeans, Eurasians and Others

The Europeans of Malaya were mostly British and were in Government service, in the professions and in commerce. Their influence was out of all ratio to their number. The Eurasians tended to fill a large proportion of the subordinate positions in the Government service and were a stable community deserving respect. Before the war there were 6,400 Japanese, mostly concerned with fishing, dentistry, photography, shop-keeping and in administering the few Japanese-owned rubber estates and exploiting the Peninsula's iron and manganese resources (which only they found worthwhile). Though at different periods the Siamese have claimed varying degree of relationship with a number of the Malay States, people of Siamese origin form less than 3 per cent of the population of Kedah, the State where they are most numerously represented. In Kelantan they are 2.13 per cent and in Tringganu only 0.02 per cent. Nor has the Siamese language at any time spread in Malaya. For the rest, Malaya was also the field of as motley a selection of Singhalese, Ceylon Burghers, Jaffna Tamils, Hadramaut Arabs, Jews, Levantines of one sort and another, Armenians, Iraqis, Iranians and others as could be found anywhere. The aboriginal hill peoples number about 30,000 but exist apart and almost unseen.

These different communities in Malaya not merely enjoyed equality before the law but were aware and appreciative of it. They tended to mingle freely and their relations were harmonious. There were no 'quarters' in the towns restricted to any given

community, no racial differentiation in public vehicles. Even the Hindus tended to disregard caste distinctions while in Malaya. The number of clubs in which there was common membership of Europeans, Chinese and Malays was increasing.

It is a matter of great interest and worthy of remark here that all these many and various peoples coming to Malaya from outside develop a warm liking for the country of their adoption. That country is a melting-pot of races and is still a long way from fusion into a national whole. Within a short period of years the mainland has developed from a collection of feudal Malay States into a progressive country of mixed races enjoying the amenities of modern civilization. This was achieved under British protection. What the future holds is unsure, but it is certain that the British still have an indispensable function to perform—to keep the balance between the races, to encourage the growth of democratic institutions and to provide advice and guidance to the country in its political immaturity.

History

The history of Malaya over many centuries, when compared with that of Europe or other parts of Asia, is obscure—a haze ending about three generations ago, since when its history has been as eventful from the social and economic point of view as that of any ancient country transformed by Western influence. For a thousand years the engaging, hedonistic, unenterprising Malays lived more or less unnoticed by the world, sparsely inhabiting the jungle-covered Peninsula; they had, except for short periods when subject to Hindu empires in the neighbouring islands of Java and Sumatra, little political unity, and their many kings were in fact private chieftains; their culture, if primitive, was humane; after living for centuries under Hindu influence, in the fifteenth century they became Muslim, but behind an orthodox exterior preserved, and still preserve today, many of the concepts and customs of Hinduism and animism.

The history of the petty Malay kingdoms which rose and fell, fought with one another, maintained in varying degree their independence of the Empires based on the present territories of the Netherlands East Indies, it is hardly profitable to trace here. The affairs of the Peninsula in this period can be vaguely discerned in brief references in Chinese, Indian and Arab writings. Its ports always enjoyed some importance, being situated on the route to China. In 1511 the West first intruded on the country; in that year Malacca was attacked by the Portuguese, and, as the Portuguese chronicles describe, 'of the Moors, women

and children, there died by the sword an infinite number, for no quarter was given to any of them'. By the capture of Malacca the Portuguese at a blow secured political and commercial superiority in western Malaysia, which they were able to maintain by their command of the sea.

Francis Drake, circling the globe on a privateering commission from Queen Elizabeth, passed through Malaysia in 1579 and made himself agreeable to the Sultan of the island of Ternate in the Moluccas. One of the first treaties between England and an oriental monarch was made by Drake with this princeling.

Portuguese sea-power was replaced within a hundred years by Dutch. The Dutch captured Malacca in 1641, and thereafter their only rivals for the Malaysian trade were the British, who were already preoccupied with India. From 1581 to 1802 Dutch and British East India Companies competed for the control of trade in Malaysia, both Companies establishing their stations throughout the region. Dutch power remained however politically dominant, until events during and shortly after the Napoleonic wars established the British undisputed at Singapore and other coastal settlements of the Malay Peninsula, with the Dutch excluded to the islands of Java, Sumatra and the south-east.

From this period the modern history of Malaya begins. Throughout the three previous centuries of Western enterprise in the country, the Westerners had limited their occupation to the coast and their interest chiefly to trade. But as the nineteenth century developed, and the British power became stable in the Peninsula, a complete change took place. In 1867 the coastal settlements of the Peninsula which had hitherto been administered from Bengal were placed under the Colonial Office and became the Crown Colony of the Straits Settlements, and thereafter the British began gradually to assume the obligation of fostering in Malaya the institutions of a modern state. Not that they violently overthrew the indigenous governments of the country, as they had in many cases done in India. When the ports and coast settlements in British possession first began to thrive, there were in the hinterland more than a dozen minor kings or sultans. For some time the British power intervened little in their affairs. But after the middle of the century it became increasingly apparent that the petty sultans were incapable of administering their small territories in such a way as to be able to survive independently in the fast developing world around them. Chinese and European traders established in the Straits Settlements were irked by the insecurity and the disorder across the borders. The Chinese, who had

begun their intrusion in the Peninsular States as obsequious transient traders and rainers, unprotected and often victimized, had increased in number, and had by 1862 created a situation in the mining area developed by them in the Larut region of Perak which was beyond the capacity of the Sultan to control. Chinese British subjects were being driven from their mining properties by other Chinese and there were increasing appeals for British intervention in the Peninsula.

Perak was the State whose relations with Great Britain were first regulated in the manner which was to become the pattern throughout Malaya. There, as had so often happened in India, a disputed succession was the occasion of British intervention. At the end of 1873, one of three rival claimants¹ to the Sultanate asked Singapore for assistance in ending the dissension. A treaty was signed at Pangkor in the presence of most of the Perak chiefs in January 1874 by which the British recognized one of the claimants, Abdullah, as Sultan of Perak, and this Sultan undertook to accept a British officer as Resident 'whose advice must be asked and acted upon in all questions other than those touching Malay religion and custom'. Selangor, and Sungai Ujong, one of the petty States that now form the State of Negri Sembilan,² passed into British protection the same year.

The impetuosity of the first British Resident of Perak, and the over-urgent zeal of the new Governor of the Straits Settlements, caused their forward policy to result within a year in serious disturbances followed by a punitive expedition known as the Perak War. This, together with a small Malay rising in Sungai Ujong and later in Pahang, was the only warfare to mar the peaceful and voluntary passing of the nine Malay States of British Malaya under British protection between 1874 and 1914.

Under Sir Hugh Low, Perak was transformed into a prosperous State between 1877 and 1889. The population of the State rose from about 81,000 in 1879 to 214,254 in 1891. Debt slavery was abolished and peace and safety secured to the Malay *rayat* (peasant) and to Chinese fortune-hunters. Similar progress came to the States of Selangor, Negri Sembilan and Pahang. The four northern States of Perlis, Kedah, Kelantan and Trengganu were transferred to British protection by agreement with Siam only as late as 1909, and have developed on more independent lines. Johore, which had long had its own close contact with Singapore, was the last Malay State to accept an Adviser. It did so only in 1914.

¹ Meaning 'Nine States'.

Three features of the Peninsula's history since its connexion with Britain deserve more accurate and detailed examination than is possible here, viz. the increase in numbers and influence of the Chinese, the political place of the Sultans and the prospect for the Malays. These are matters of significant bearing upon the immediate future of the country.

The Chinese today number slightly more than the Malays and are incontestably the greatest contributors to the economic well-being of the country. Their say in its administration has not so far been commensurate with their contribution and they must obviously be granted more. On the other hand the Sultans and the Malays are perturbed at the degree to which they have already been ousted by non-Malay peoples.

It is interesting to examine the part that the Sultans have played in Malaya. Their contribution has been characteristically Malay. They have on the whole co-operated with and shown faith in the capability and goodwill of the Residents and they have displayed little opposition to the course that events have taken. In some cases they may have been overconcerned for their own self-interest and reluctant or unable to move fast enough with the times. During their connexion with the British they have certainly achieved a dignity, wealth and status beyond anything they had anticipated and have proved themselves friendly and often sagacious advisers.

One of the basic questions for the Malayan historian and political critic is whether more could not or should not have been done to equip the Malays for survival in competition with the immigrant Chinese. As early as 1880, Sir Frederick Weld, the Governor, in a dispatch to the Secretary of State remarked of the Malays: 'Nothing that we have done so far has taught them to govern themselves; we are simply teaching them to co-operate with us and to govern under our guidance.' There is no doubt that at the earliest stage of British intervention in 1874 London intended the Sultans to conduct the government of their States, aided by the advice of their Residents. It is as certain, in the F.M.S. at least, that largely with the willing co-operation of Their Highnesses, the Residents have tended to administer their States for them. On the whole this has been a mutually acceptable division of labour and responsibility. In the Unfederated States circumstances have favoured indirect rule and there has been a large measure of native Malay control of these Malay States, but it is nevertheless a fair generalization to say that, taking the Peninsula as a whole, the pace of development and change has of necessity been swift and beyond the capacity of the Malays.

The British have shown a strict regard for the terms of the treaties. In 1927, in the Federal Council, Sir Hugh Clifford made his famous declaration of British policy in the Peninsula: 'These States were, when the British Government was invited by their Rulers and Chiefs to set their troubled houses in order, Muhammadan monarchies. Such they are today, and such they must continue to be. No mandate has ever been extended to us by the Rajas, Chiefs or people to vary the system of government. . . . The adoption of any kind of government by majority would forthwith entail complete submersion of the indigenous population, who would find themselves hopelessly outnumbered by the folk of other races; and this would produce a situation which would amount to a betrayal of trust which the Malays of these States, from the highest to the lowest, have been taught to repose in His Majesty's Government.'¹

It seems safe to accept these words of Clifford as indicating the Colonial Office's policy of 1927, as Mr Ormsby-Gore a year later reported officially on these States in like manner: 'They were, they are, and they must remain, Malay States. . . . We have neither the right nor the desire to vary this system of Government.'² That was in 1928 and times change. Though there is weight in Clifford's statement of 1927 that 'owing to the peculiar circumstances of the Federated Malay States, the system of administration must, in its essence, be autocratical' it is unquestionable that the aim of British policy is that all the Colonial peoples shall attain self-government as early as is practicable. The Secretary of State for the Colonies and Mr Churchill reaffirmed this in 1943.

The political development of the Peninsula has, during all these years, been determined by two conflicting tendencies: *one*, the desire to progress with modern ideals of democracy, and *two*, the necessity to keep faithfully promises made to the traditional rulers of the country. These two factors have to be faced bravely and frankly and a happy solution that will preserve the good features of the indigenous, traditional rule and yet allow full scope for gradual development towards a modern, democratic State, must be found.

Administration

What was the character of British administration in Malaya when the Japanese invaded it?

Two outstanding features must be emphasized here:

¹ Quoted by Rupert Emerson in *Malaysia* (1937), p. 174.

² Emerson, *op. cit.*, p. 175.

- (a) that there can be no question whatever that the vast majority of the inhabitants of the Peninsula have shown themselves content with the three forms of autocratic Government that had developed in the country since the British connexion, and that there was no anti-British movement;
- (b) that notwithstanding the generally satisfactory feeling about the administration, *it is the aim of British policy that the colonial peoples shall attain self-government as early as practicable.*

As regards (a) the various peoples that inhabit Malaya have good reason to prefer a degree of British supervision, because they appreciate British law and the incorruptibility of British civil servants and see before them the possibilities of communal strife were that supervision to disappear. If, by any combination of events, British collaboration were removed, the terrible prospect would face the Malays of the Chinese gaining an upper hand in the administration: a state of affairs that would undoubtedly, in the present mood of the Malays, lead to bloodshed and civil war in the Peninsula. On the other hand it is only natural that the Chinese who have contributed so greatly to the prosperity and the development of the country (a country in which by now they have a rightful stake) should now tend to seek to exercise more influence in its government. This tendency will undoubtedly grow as time goes on.

As regards (b) the following is a summary of the system of administration at the time of the Japanese invasion.

There are three forms of government:

(1) In the Straits Settlements there was typical direct British colonial rule.

(2) In the Federated Malay States the government was in practice carried on largely by the direct rule of British officials, although both in theory and in intention a system of indirect administration by Malays existed.

(3) In the Unfederated Malay States there was perhaps the most fortunate and promising form of rule by Malays, with the assistance of a British Adviser.

In the Colony of the Straits Settlements the Governor was advised by an Executive Council and Legislative Council. These Councils consisted of officials and of nominated and elected Members. There was an official majority on each. The scheme of Government was that of the ordinary Crown Colony. Legislation was effected by Acts of the Imperial Parliament, Orders of the King in Council, and Ordinances of the Legislative

Council. Though the Governor had a casting vote there was strong official aversion to resort to the official majority and it was seldom exercised. There was a spirit of compromise and normally no major legislation was introduced till the representatives of the different communities had been sounded upon it. Unacceptable measures were dropped where possible or suitably modified.

In the Federated and Unfederated Malay States supreme authority was vested in the Sultan who exercised this authority subject to the terms of the treaties already mentioned. The Malay States each had some form of State Council, in most cases presided over by the Sultan and consisting of members nominated by him with the approval of the High Commissioner.¹ As in the Straits Settlements there was consultation, unpopular legislation being avoided as far as possible, and there was little friction.

The administration of Malaya was in the hands of members of the Malayan Civil Service, the Straits Settlements Civil Service, the Malay Administrative Service of the F.M.S. and the various individual State Civil Services of the Unfederated States. Of these the Malayan Civil Service was still largely a corps of European civil servants, members of the Colonial Administrative Service recruited in England and liable to transfer to other colonies. (These all had a knowledge of Malay and some were trained in Chinese dialects or Indian languages.) Malays were the only Asiatics eligible for entry to the Malayan Civil Service and increasing numbers of them were entering it. Members of the Malayan Civil Service served throughout Malaya. Members of the Straits Settlements Civil Service were Straits-born Eurasians, Chinese, Indians and Malays and they served only in the Straits Settlements. The Malay Administrative Service was confined to Malays recruited in the F.M.S. for service there. The Civil Services of the Unfederated States bore considerable similarity both in efficiency and in limited source of recruitment to the administrations of some Indian States. The Straits Settlements Civil Service was the only service open to the non-Malay Asiatics of Malaya.

Subject to the Governor the administration of the Straits Settlements was in the hands of the Colonial Secretary in Singapore, of the Resident Councillors with their District Officers in Penang and Malacca, and of the Resident in Labuan. The District Officers were assisted by Malay village headmen known

¹ The Governor of the Straits Settlements was at the same time High Commissioner of the Malay States.

as *penghulus*. In the towns of Singapore, Penang and Malacca there was Municipal Government; in the rural areas there were Rural Boards and there were also various other Boards and Committees on which the people were gaining gradually more and more representation, e.g. the Education Board, Harbour Boards, Hospital Committees, the Chinese Advisory Board that assisted the Secretary for Chinese Affairs, and the Licensing Boards.

Each state of the F.M.S. had a British Resident assisted by a State Secretariat and District Officers, and *penghulus*. Urban administration in the larger towns was in the hands of Sanitary Boards and there was very much the same range of other Boards and Committees as in the Straits Settlements.

The Unfederated States each had their own bureaucratic Government with Secretariat, District Officers and the rest under the Sultan, assisted by seconded officers of the Malayan Civil Service headed by a British Adviser.

In the F.M.S. the District Officers were European and Malay; in the Unfederated States they were mostly or entirely Malay. All communities were represented in the subordinate posts in the Government and in the clerical services throughout Malaya, though, in the Unfederated States especially, marked preference was given to local-born Malays. In the Straits Settlements and F.M.S. Indian and Chinese clerks predominated.

The division of so small a region as the Malay Peninsula into 11 separate administrations strikes some critical observers as inefficient and extravagant, but they may forget that it was an inevitable historical growth, imperfect as it now appears. In defence of the order that has existed so far it should be admitted that whenever unity of action by all administrations was essential this was always secured and that the arrangement worked, and suited most people. It will be interesting to observe how far the war and the Japanese occupation will have prepared the various Malayan peoples for further unification of the country's administrations.

That a greater degree of unification is desirable, few will question. This has been obvious long enough. Such changes however can only go the pace of local opinion. The fundamental obstacle to the unification and democratization of the country (which last is the declared aim of British rule) is, as it has long been, the 'moral obligation' to stick to the Treaties concluded with the Sultans at a period when these ideals had not yet progressed as far as today. Greater unification of the administrations is not the only need. It is essential too to provide for the substantial aspirations and claims of the Malayan Chinese, now

numerically and economically the most significant community. No one can deny that times are changing and that we are changing with them. In what way the Sultans themselves and their subjects can be persuaded to admit this progress and agree voluntarily to basic changes in the present constitution cannot be forecast with certainty. But it would be foolish to imagine that the evolution of the Government of Malaya can be stayed.

Malaya's Economy

Stated briefly, Malaya existed by exporting rubber and tin and importing rice and manufactured goods. Though she attained fabulous prosperity in these circumstances the noteworthy point is that her economic structure was over-simple and precarious. It was a familiar saying in Malaya that the country's economic eggs were in but two baskets, rubber and tin. The country was dependent upon these for the importation of 60 per cent of its rice, almost all its milk and much of its other food and for most manufactured goods. Every time there was a serious fall in the world demand for rubber and tin, the F.M.S. used to be left with little to run its elaborate and costly Government services but the accumulated surpluses of revenue over expenditure of better years. Periods of world rice shortage, such as occurred after the Great War and are occurring now under the Japanese, prove very costly for a country that normally imports most of its food. After the slump of the early 1930's the Malayan Governments endeavoured to broaden the basis of revenue and to encourage the local production of food, but the only effective measure, viz. reversal of policy and the general admission of the Chinese to agricultural land, was not then politically feasible. Grow-more-food campaigns had little attraction for smallholders who normally earned far more money from rubber.

A marked feature of Malayan trade was the large entrepôt trade of Singapore and Penang. Singapore owes its great growth and prosperity to Raffles's Free Trade policy and to its geographical position. Whereas the Peninsula depended upon the production of rubber and tin, the two great ports of the Straits Settlements depended upon their entrepôt trade. There, after sorting and treating, the produce of the surrounding territories of Malaysia was exchanged for the manufactured goods of the industrial countries of the world. To this extent the interests of the Peninsula and of the Colony ports were not identical. In fact one of the obstacles to a Malayan Union is that free trade is the basis of Singapore's economy, while a common customs policy benefits the Malay States.

Malaya's trade was cosmopolitan and by no means mainly British. In 1929 42 per cent of the entire *export* trade of Malaya was to America and only 14.3 per cent to the United Kingdom. Though Britain's share of Malaya's *imports* was a trifle higher, it was only 13.7 per cent in 1931 against, for example, the 38.1 per cent of the Netherlands East Indies. In 1934 a degree of Imperial Preference was introduced in Malaya against considerable local opposition, in face of fierce Japanese competition. A Trade Commission examining Malaya's economic structure in 1933 reported that Malaya itself did not benefit from Imperial Preference, and there is little doubt that in this instance the narrow interest of the Malayan peoples went by the board when Commonwealth, and particularly British, advantage was at stake.

The chief product of Malaya and her chief source of revenue during most of the last quarter-century has been rubber, of which there were over 3,300,000 acres in 1937. About 54 per cent of this area was owned by Asiatics who produced some two-fifths of the total crop. The nominal value of external capital in Malayan rubber companies was over £55 millions in 1936. The next most important Malayan product and source of revenue was tin. This was mostly obtained from alluvial deposits. Till the increase of tin dredges in the 1920's and 30's 80 per cent and more of Malayan tin had been produced by Chinese open-cast mines; but by 1938 over 100 dredges, mostly controlled by European capital, were in operation and the Chinese share had fallen to roughly a third of the total. The nominal external capital in Malayan tin mines in 1938 was £14 millions, predominantly British. The value of the Malayan output for 1940 exceeded £21 millions.¹

The capital controlling rubber and tin (the source of all prosperity in the country) was mainly British, the remainder being mostly Chinese, but other financial interests were also present, particularly Australian in gold mining and tin, American in tobacco and rubber, French in tin, rubber and oil palm, Danish in copra, rubber and general trading.

Malaya was not an industrial country. Apart from tin-smelting, local industry was small and confined to pineapple canning, brewing, the manufacture of rubber articles, soap, matches, cigars, biscuits, ice, aerated water and the like. There were a few engineering works.

Banking was mainly in British and Chinese hands, but

¹ For this and more detailed information see *Britain and Malaya* by Sir Richard Winstedt (1944).

American, Japanese, and Dutch banks had branches in Singapore. The large monthly remittances of wage-earners and small traders to China and India constituted a remarkable feature of the country's economy. It was a natural result of the fact that many of the inhabitants were temporary sojourners from outside. Those who would argue that it impoverished the country must not ignore that it went largely as reward to the creators of the country's wealth.

The significance and extent of Malaya's trade is not as generally appreciated as might be expected. For instance in a prosperous year like 1926 it totalled more than that of all the other British Colonies together and even 'in 1938 came to more than all the trade of New Zealand, more than all the trade of our seventeen African colonies together, more than half the trade of the Indian Empire'.¹

Education

Many outsiders will be surprised to learn that some 50 per cent of all boys and 25 per cent of all girls of school-going age in Malaya received a school education before the Japanese invasion, and that education in the Malay language was free and compulsory for Malays. Non-Malays, such as Chinese, preferred to send their children to their own schools. That, surely, compares favourably with the state of education in most oriental countries? But though this is worth noting, it would be wrong to be either self-congratulatory or too complacent about it in view of the wealth of the land and the more that might perhaps have been done in consequence.

The schools of Malaya were Government schools, Aided schools and Private schools. As their titles imply, English was taught in Government English schools and Private English schools, as well as in Missionary (Aided) schools. It was also taught in a number of the bigger Chinese Vernacular schools.

Before the British, the vast majority of the Malays received no education at all. Muslim divines taught the few select elements reading, including the Holy Koran in Arabic—a language of which they understood little.

Malaya's oldest school, the Penang Free School, was founded by Penang residents in 1816 (free of religious and other restrictions but fee-paying), and Sir Stamford Raffles founded Raffles Institution in Singapore in 1823 'to educate the sons of the higher orders and others' and to teach the East India Company's servants

¹ For this and more detailed information see *Britain and Malaya* by Sir Richard Winstedt (1944).

Malay. During the early nineteenth century the revenues of the Straits Settlements were not large, and the Government took little interest in education, leaving it mainly to missionary bodies to educate their future clerks. The Malays of this period preferred to attend Arabic and religious schools and the Chinese ran such Chinese schools as there were.

The first Inspector of Schools was appointed in 1872, five years after the Straits Settlements had ceased to be part of an Indian Presidency and passed under the Colonial Office. At the time there were only 19 English schools with 2,641 pupils and 28 Malay Vernacular schools with 818. The English schools remained controlled by missionary bodies or, as in the case of Raffles Institution, by trusts. Though they received grants-in-aid these were on an unsatisfactory basis till 1922.

During the first decade of this century earnest effort was made to improve the staffs of English schools. With greatly increased revenues after the Great War the Governments of Malaya took over a large number of schools not under missionaries and attracted better qualified staff. At the time of the Japanese invasion there were 416 English schools with 48,413 pupils and 1,788 staff. The fees were a mere £3-10-0 per annum and there were scholarships and free places.

The Malay Vernacular schools were slow in improvement and growth. Malay parents continued to prefer to send their children to Muslim religious schools. In 1878, six years after the appointment of the first Inspector of Schools in the Straits Settlements, a Training College for Malay vernacular teachers was founded. It lasted till 1895. Its instruction was too literary and impractical, and its last graduates, who were retiring in the 1920's, were conspicuously ill-adapted to the changing need of the Malays. A fresh start was made in the training of Malay teachers in Malacca in 1901, and an additional Training College was opened at Matang in Perak in 1913. In 1922 these colleges were closed and the Sultan Idris Training College was opened in Tanjong Malim, Perak, in their place. There were vast improvements in Malay vernacular education both in curricula and buildings between the Great War and the Japanese invasion of 1941.

Wherever there are Chinese they will of their own enterprise provide their own education. Since early in the present century grants-in-aid were made to Chinese schools but they remained far from satisfactory. With the rise of Chinese nationalism and the Kuomintang's attempt to further its own political ends by influencing Overseas-Chinese children in the schools of Malaya, control of Chinese education passed to the Chinese Protectorate.

This accomplished its political purpose. There were over a thousand Chinese schools in 1941.

The Indian Vernacular schools were the Cinderella of Malayan education. The better-off Indian families preferred their children to go to the English schools and took little interest in Indian vernacular education. The bulk of the Indian population was illiterate and transient. These people were in Malaya for as short a time as possible, to save money against their return to their Indian village, and they placed the earnings of their children before education. Except for a very few Government-run Indian Vernacular schools the Indian Vernacular schools were rubber estate schools run for the children of coolies on the estates. Grants-in-aid were made to these schools, but they were of less than £1 per capita per annum. With a few creditable exceptions these schools were poorly housed, teachers poorly paid and their apparatus conspicuously absent. Nevertheless they offered better conditions than Indians of this class would usually get in the villages of their homeland.

Each community thus had facilities for elementary education. Secondary education for all was practically confined to the English secondary schools (though the Chinese had a few Chinese secondary schools). With the exception of the training offered in Singapore by the King Edward VII Medical College and Raffles College and in Kuala Lumpur by the Technical College, there was no organized higher education in Malaya itself (though degrees of London University could be taken externally in Malaya). For higher education it was necessary for students to go abroad, and a number regularly went to English and, to a lesser extent, to American, European and Australian universities. The Malayan Government had long subsidized education abroad by the Queen's Scholarships limited to six scholarships a year, each for a maximum of £500 per annum tenable for five years. To these scholarships was added free provision of passages, clothing, examination and tuition fees and supervision.

Much more was spent on social services in Malaya, of course, than was necessary merely for the production of rubber and tin and the conduct of the economic life of the country, but it is a fact nevertheless that this country, one of the richest in the world for its size and population, spent a mere 5 to 7 per cent of its large revenues upon education. This probably provided a better service than that obtaining in many less-favoured regions spending a higher percentage of their relatively poorer revenue upon education, but it may well be asked whether in so extremely wealthy a country still more ought not to have been spent. Admittedly

Malaya's economy is precarious and in times of slump it is the social services that are hardest hit. Also no doubt the revenue per head was enormous and consequently 5 to 7 per cent was a considerable figure. Yet, in the opinion of some, greater progress could have been made with education.

As in India, the problem of primary education in Malaya is the recruitment of satisfactory teachers, and it is difficult to believe that greater expenditure upon their creation was not feasible in Malaya.

The Japanese Invasion

In discussing a region of such topical interest as Malaya some mention has to be made of its occupation by the Japanese.

The loss of Malaya, and of Singapore in particular, naturally severely shook the British public and the non-Axis world. The intensity of the shock can well be measured by the bitter ardour of the search for scapegoats that immediately followed in England and America. The Asiatic peoples of Malaya, the planters, the civil servants, were all attacked indiscriminately for what was essentially Imperial tactical weakness.

Though it could hardly have been apparent to any but perhaps the War Council at the time, it has become obvious enough with time that Malaya in 1941 was doomed unless the Japanese should turn out unexpectedly incompetent—which they did not. After all, none of the major premisses of any scheme of Malayan defence any longer held good at the hour the Japanese struck. It is true that by December 1941, when the Japanese attacked, the country had the requisite food-stocks to withstand long blockade, that it was dotted with the pattern and number of strategic airfields necessary for peripheral defence of the 'fortress' of Singapore, but the planes that should have used those airfields and much equipment besides were lacking. (There were under 100 front-line aircraft, most of them obsolete, and as things turned out, the stocks of food and the airfields were of great aid to the Japanese in their campaign and after.) Britain had lost all her equipment at Dunkirk in June 1940 and at that precarious stage of the war was committed to supplying Russia and to diverting all else she could to the Middle East. First things came strictly first just then, and Malaya was well down the priority list—and rightly so. To stretch Britain's extremely limited resources to cater for a region not actually a combat area would doubtless have been to lose the struggle in the Middle East. British strategy then, as always, was concerned with winning the last battle; if Malaya had to be lost temporarily to this end, it was for the members of the

British Commonwealth to stomach it, and it is hoped, learn the lesson. Naturally it was particularly hard for Malaysians to see things objectively in this light at the time, but doubtless when the history of this period is unrolled, this interpretation will be found substantially true.

It is easy to be wise after the event but there were plausible enough grounds for supposing that Japan might not strike; she had by then missed opportune moments for attack and undoubtedly she stood to gain much by keeping out of the war. In any case whether or not Japan was to attack, Britain then had little choice. Britain's position was precarious and she was playing for time and was forced to take the risks she did.

Major premisses of the scheme of defence of Malaya had been, (a) that the defending forces could rely on immediate air support, (b) that a battlefleet would arrive in due time to relieve the besieged defenders of the Peninsula, and (c) that the enemy could not approach without being spotted and would be attacked and destroyed, partially at least, while on the water and most vulnerable. Not one of these premisses held at the moment of the Japanese invasion: the Japanese were in a position to maintain absolute supremacy in the air and at sea for the duration of their campaign and they were not attacked at sea though they were observed approaching for days beforehand. One is left to conclude (1) that in Britain's then desperate plight air support could not be afforded, (2) that the apathy that permitted the success of the Japanese blow at Pearl Harbour precluded adequate naval support to save the Peninsula, and (3) that the British were so clearly aware of their weakness that they had no course but to risk that last miserable concession that was so incomprehensible and demoralizing to those on the spot, namely the decision not to strike the approaching Japanese troopships in the Gulf of Siam with all of the few land-based aircraft available in Malaya. A possible explanation is that this decision was taken in the rather comfortless hope that the Japanese might be demonstrating in the Gulf more as a threat to Siam than to British Malaya. If that was so it only shows how lamentable Britain's predicament was. The full history of this and much else will not be available till after the war.

The temporary passing of control of the Malayan seas to the Japanese at the very outset of the war, following the American naval losses at Pearl Harbour and the loss of the *Prince of Wales* and the *Repulse*, and the absolute superiority of the Japanese in the air sealed Malaya's fate. The Japanese were not merely good soldiers well organized. They were lucky as well. It is not yet generally appreciated that the *Prince of Wales* and the *Repulse*

were deliberately and necessarily risked on a mission which, if successful, would have altered the entire course of that campaign. They were dispatched in the hope that under cover of monsoon weather they might approach unobserved and deal the Japanese invasion fleet a staggering blow in a dawn attack. The probable consequence of observation by the superior Japanese air forces was fully appreciated, but the risk had to be taken. And Admiral Sir Tom Phillips all but accomplished his desperate task. So far as is known, he was only observed during the last hour of daylight when the clouds had cleared and he had turned in towards the enemy from the wide sweep which he had made in approach. Without air cover the two battleships were lost to overwhelming air attack next day.¹

So much for the general strategic plight of Malaya. As to the country and its peoples, throughout the Malayan campaign all communities in Malaya were stout-hearted and loyal, though often bewildered. They have since been grossly misaligned and charged, without foundation, with fifth-column activity. Authentic cases of spontaneous anti-British activity by permanent residents of Malaya have yet to be recorded. What little fifth-column activity there was was that of the well-organized agents of the Japanese *Kame* secret organization and of Chinese agents of the Japanese Puppet (Wang Ching-wei) Government in China, who had been selected, appointed and trained before the war. Japanese infiltration methods and their habit of using native costume and unorthodox clothing and appearing, where possible, behind rather than in front of our troops, tended to confound men new to Malaya and make them regard anyone wearing a Malay *sarong* or Chinese coolie costume as an enemy. And, alas, the well-meaning and loyal Asiatic population paid heavily with their lives for this state of mind of the troops.

Though an accurate and full account of Malaya under the Japanese will not be possible till after the war some conclusions are not in doubt. Japan came promising the Asiatic peoples 'Co-prosperity'. Instead she has, in Malaya, brought them close to starvation.

Since their occupation of the country the Japanese have administered it with two main purposes, to secure from it the little tin, rubber and other produce, particularly bauxite, which Japan needs and to make the country 'self-sufficient', the intention

¹ For a fuller account of this and of the Malayan campaign see Sir George Sansom's 'The Story of Singapore' in *Foreign Affairs*, January 1944.

being that Malaya shall tax Japanese shipping as little as possible. Denied the world market for exports and denied sufficient imports of foodstuffs, the Malayan peoples have suffered acutely and may well be worse off now than peoples of any other region in East Asia. In normal times the wealthiest region in the East, Malaya has, under the Japanese, become the poorest.

The Japanese have increased the hatred of the Malays by transferring the four northern States of Perlis, Kedah, Perak and Kelantan to the control of the Siamese. Malaysians of all communities, and the Chinese in particular, have been subjected to compulsion in many resented forms such as forced registration of families and collections of money, forced labour, the organization and control of trades by Japanese-controlled guilds and associations, and the formation of Peace Preservation Corps, a system of collective responsibility by which all individuals of a street, a village or a given community are held responsible for security within their area. There is no doubt that the departure of the Japanese will be a relief to all communities.

This chapter is merely an attempted interim elucidation till the true story of the Malayan campaign and the subsequent occupation of the country by the Japanese can be pieced together. There is no suggestion that all was well in the Malayan campaign or that it might not have been more competently conducted. (I taught us, for instance, at great cost, something of the tactics of infiltration and jungle warfare.) My purpose here is to try to correct the very general erroneous impression that has arisen regarding this most loyal territory of the Commonwealth, that has suffered grievously not only at the hands of the Japanese but of uninformed critics on our own side.

The Future

The time draws near when the Japanese invader will be driven from the land of Malaya. What, then, does the future hold for the British, the Malays, the Chinese, the Indians and the other peoples now inhabiting the Peninsula?

The immediate short-term economic problem is likely to be shortage of food and manufactured goods. The war has deranged rice production in the rice-exporting countries of Burma, Siam and Indo-China, and the rice shortage in East Asia is likely to continue for a time after the war is over. Sea transport may also be restricted in the immediate liberation period. The problem of feeding the population of Malaya therefore will depend to a great extent on the success of measures to produce crops locally.

The long-term economic forecast for Malaya depends on two major factors: first, a continued world demand for her rubber and tin, secondly upon success in gradually establishing an economic structure which does not depend so heavily as does the present structure upon the production of commodities subject to sharp fluctuations in price. As regards rubber, the long-term future is uncertain. The people of the United States, the chief buyers of natural rubber, may well prove determined never again to be so dependent upon rubber from Malaysia. It would seem that the synthetic rubber industry has come to stay. It is nevertheless reasonable to hope that the world demand for rubber, natural and synthetic, will be sufficient to ensure reasonable prosperity for the producers of each. The welfare of Malaysia as a whole, and of Malaya in particular, depends upon it.

The export of tin presents a somewhat similar problem. The world has had to do without Malaysian tin since 1941 and has to some extent developed alternative or substitute materials. Although tin when again available will undoubtedly recover much of the ground lost, the prosperity of Malaysian tin cannot be regarded as assured. The immediate difficulty in this industry may be the supply of equipment (particularly dredging equipment and electrical installations). This is not likely to prove insuperable.

Finally it has to be considered how far it is feasible to rectify the unstable character of Malaya's economy so that the peoples' livelihood does not depend exclusively on the fluctuating demands of foreign industries and world markets. The local problem is primarily to induce producers to balance the immediately lucrative occupation of rubber production with other necessary but much less spectacular forms of production. Adaptability in switching over to production for export in accordance with foreign requirements will be as necessary in Malaya as in other exporting countries after the war. The need will be for local ingenuity and forethought; guided by enlightened Government policy, to make the most of the natural riches of the country, and if these requirements are fulfilled Malaya can well look forward to an era of internal prosperity and external usefulness. But, of course, the future of the tropical peoples, whose welfare and progress so largely depend upon the demand for their tropical crops and produce, rests more than on anything else upon the degree to which there is after this war economic planning and organization for the welfare and security of the whole world.

As regards the political future of Malaya the position can be outlined as follows. Contrary to the belief of some, neither in the Colony nor in the Malay States is the presence of the

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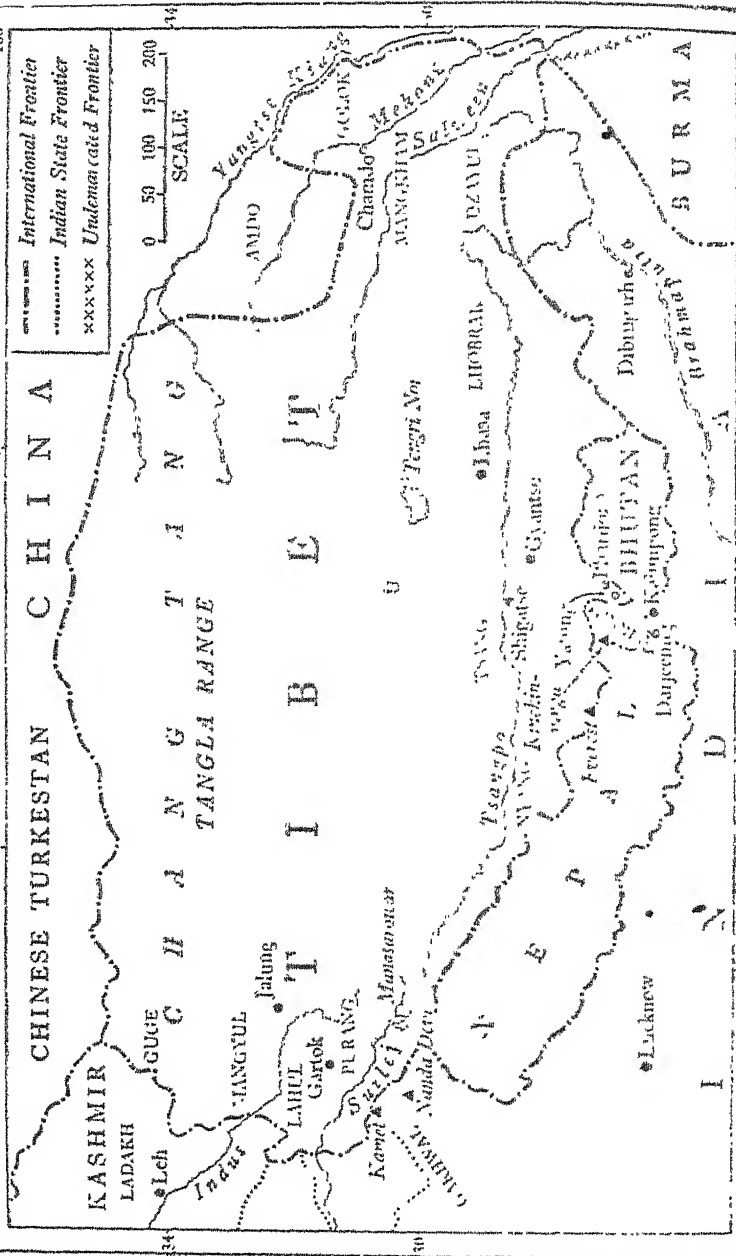
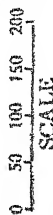
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No. 30

TIBET

BY

DAVID MACDONALD



HUMPHREY MILFORD

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tragopan. Hoopoes, larks, magpies, partridges and sand-grouse are found on the plains. Water-fowl of several species, including the bar-headed goose, duck and black-necked crane, frequent the lake edges.

Climate. Tibet possesses an exceptionally severe climate. Intensely cold in winter, the severity is still further increased by a fierce wind which rises in the forenoon and continues with great violence till after sunset. The difference between day and night temperatures is very great. The maximum temperature in Fahrenheit degrees at Gyantse during the summer is 105° and the minimum temperature is minus 5° or even less during the winter. The rainfall is comparatively small and does not, on the average, exceed twelve to fourteen inches annually.

Taken as a whole, Tibet is poor in vegetation. The *Chang Tang* in the north is so excessively cold and so much exposed to violent winds, that nothing can be grown. The only cultivable areas of the country lie in the southern and eastern regions. Barley, buckwheat, peaches, pears, apples, walnuts and apricots are grown in these parts. A variety of conifers abounds in the forested areas. Rhododendron grows in profusion. Among the many varieties of wild flowers, iris, edelweiss and wild roses are found on the mountain slopes.

Lakes and Rivers. Tibet is a land of lakes and rivers. The Indus, the Sutlej and the Brahmaputra have their sources in south-eastern Tibet. The Yangtse, the Mekong and the Salween, three of the largest rivers in south-east Asia, rise in the eastern part of the country.

The lakes of Tibet are the highest in the world. The *Tengri Nor* (1000 sq. miles) lies in the heart of the country. *Manasarowar* and *Rakas-Tal* are two sacred lakes near the source of the Sutlej. Besides these there are many other lakes of more than 100 sq. miles in area.

Minerals. Very little is known regarding the mineral resources of Tibet. Gold is found in some places in the uplands of the northern plains, and also in river beds in the west. Eastern Tibet is comparatively rich in mineral deposits, particularly gold, silver, copper, iron, lead and borax. The mineral wealth remains almost undeveloped.

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Trade Routes. By far the most important trade-route between India and Tibet takes off from Kalimpong in the district of Darjeeling. Crossing into south-eastern Tibet, it enters the Chumbi Valley by the *Natu La*¹ or the *Jelep La* and proceeds to Phari. From here there are two routes to Lhasa, the capital: the shorter one runs along the eastern side of the Otter Lake (*Hram Tso*), and the longer one via the town of Gyantse.

Towns. Towns of any size are few in Tibet, and the total population is estimated at three to four million. The majority of the population resides in hamlets scattered over the countryside, wherever it is possible to wrest a living from the soil. The largest city is Lhasa, the capital, founded about A.D. 400 by an ancestor of King Song-tsan Gampo. It first consisted of a mere fortress, built on what is now known as the Potala Hill, with a village beneath its walls. Fortifications and palaces were added by Song-tsan Gampo. Some of these, incorporated in later designs, exist even today in the buildings of the present residence of the priest-king of Tibet, His Holiness the Dalai Lama. This establishment, known as the Potala Palace, is the most imposing edifice in the country. Another object of interest is the Jokang, the great temple built in A.D. 652. This shrine, considered specially holy, was erected to house the images brought from China by the wife of King Song-tsan Gampò. The chief image, that of the Youthful Sakyamani, is literally covered with uncut precious stones. All the altar vessels of the shrine are of solid gold.

Next in importance to the capital is the town of Shigatse, situated 130 miles to the west of Lhasa. Here is the seat of the Government of Panchen Rimpoche, more commonly known as the Tashi Lama. Considered almost as holy as the Dalai Lama, although he has not the same temporal powers, the Tashi Lama governs the Tsang province, with the exception of the towns of Gyantse and Pharijong, and is responsible to the Central Government for the proper administration of his fief.

¹ *La* means Pass.

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Sixty miles southwards of Shigatse is the town of Gyantse. Situated at the junction of the Indo-Lhasa and Indo-Shigatse trade routes, it has been selected as a trade mart by the Governments of India and Tibet. This town is the headquarters of the Trade Agents (liaison officers) of both Governments. The main feature of Gyantse is the *jong* or fort. Built on a hill in the centre of the Gyantse plain, this edifice dominates the whole of the town and the countryside for miles. During the Younghusband Mission to Lhasa in 1904, this fort was captured, but was handed back to the Tibetan Government at the cessation of hostilities. At Gyantse is the terminal station of the Indo-Tibet telegraph line which belongs to the India Government. The line from Gyantse to Lhasa is the property of the Government of Tibet. A mile south of the city is a fort in which is housed the British Trade Agent with his military escort. His functions are really those of a Political Agent in touch with Tibetan affairs.

All along the southern and eastern frontiers are small stations, the headquarters of frontier guards and trade marts. One of the largest, Pharijong, is now accessible to visitors. Through Phari passes all the trade of southern Tibet with India.

History

Very little is known regarding the history of Tibet prior to the 7th century of the Christian era. The available accounts of this pre-historic period are mostly mythical and legendary, helped out from time to time by contemporary Chinese history. Tradition states that the Tibetan race was descended from *Chen-re-si*, the 'Lord of Mercy', the patron deity of Tibet.

The early legendary kings commence with Nya-tri-tsanpo, said to have been the fifth son of King Prasenajit of Kosala, the first royal patron of Buddha. Next king in succession was Lha-to-tori Nyan-tsan, whilst the fourth in line was Namri Song-tsan.

Early Kings. Real Tibetan history commences from the 7th century A.D. with the reign of Song-tsan Gampo, one of the greatest kings of Tibet. A conqueror, a law-giver and a religious reformer, he brought great advancement and

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enlightenment to his country. With the introduction of an alphabet, giving expression to the Tibetan language in writing, he formulated a code of criminal law and a code of morals. Although Buddhism had entered Tibet some two hundred years earlier, it was not until his reign that it gained a firm hold. This was in no small measure due to his military conquests in India and China. At the end of the latter campaign he forced the Emperor of China to conclude a humiliating peace. Among the terms of the treaty was a demand that a princess of the Imperial house be given as his bride. This lady, doubtless of great strength of character and a Buddhist by faith, lost no time in establishing her religion firmly throughout her new country of residence. The king made Lhasa his capital and built the Potala Palace, which has since remained the residence of the Dalai Lamas.

In due course Song-tsan Gampo was succeeded by his son, Mang-song Mangtsan. An able ruler of the country, this king further extended his father's conquests. Next in line of succession was Tsuk-tsan. A staunch believer in Buddhism, he did much to spread that religion throughout his dominion. His son Ti-song Detsan, the next king, conquered much of western Tibet and extended Tibetan rule over parts of India. About this time Tibet was visited by the Indian Tantric Buddhist, Padma Sambhava. Founder of the *Nying-ma-pa* or old sect of priests, now known as the Red Hats, this religious pioneer built the first large monastery at Samye. Ti-song Detsan was succeeded by his son Muni Tsanpo.

After two more reigns in the 9th century A.D., Ralpa-chan ascended the throne. A king with deep religious convictions, he organized and increased the existing priesthood, built temples and zealously extended Buddhism throughout the country. During his reign many Indian Buddhist teachers visited Tibet and translated the Buddhist scriptures. The king introduced standardized Tibetan weights, measures and coins after the Indian pattern. His great devotion to Buddhism led to his murder at the instigation of Lang Darma, his younger brother, who was at the head of the

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anti-Buddhist party. After ascending his brother's throne, Lang Darma did everything in his power to destroy the Buddhist faith. However, retribution overtook him in the third year of his reign when he was himself assassinated by a Buddhist monk.

With the death of Lang Darma the long line of Tibetan kings came to an end. Rapidly the Tibetan Empire fell to pieces and the country became divided into small principalities. In place of the old monarchy there arose petty chieftains, each with his own fort and retainers.

Priest-kings of Tibet. By the latter end of the 11th century, Lamaism had firmly established itself throughout the country. A tremendous impetus was given to the faith in the second half of the 13th century. This was due to the great interest shown by Kublai Khan, the first Mongol Emperor of China. Inviting to his court the high priest of the large Tibetan monastery at Sakya, Kublai Khan became a convert to Lamaism and gave the sovereignty of Tibet to the Sakya lama. This was the beginning of the rule of the priest-kings of Tibet. For seventy years onwards (1275-1345) twenty successive Sakya lamas administered the country. Finally in 1350 the Sakya priest-king was overthrown by King Chang-chub Gyaltsen who established himself as ruler of Tibet. The Sitya dynasty, as it is known, thus founded, continued in power till 1635, when it was brought to an end by the king of the Tsang province.

Rise of the Yellow Hats. Early in the 15th century, a lama named Tsong-kapa reorganized Atisha's reformed *Kadam-pa* sect with the help of Atisha's disciple Dromton, and altered its title to *Geluk-pa*, the 'Virtuous Order'. Members of the sect, known as the 'Yellow Hats', were enjoined to observe a stricter code of morals than heretofore. They were forbidden to drink wine or marry. Tsong-kapa founded the monasteries at Ganden and Sera which, with Drepung, are today the three strongest religious bodies in Tibet. Successor to Tsong-kapa was his nephew Ge-dun Truppa, the first Grand Lama of the Yellow Church, popularly known as the Tashi Lama. After his death in 1475, the soul of Ge-dun Truppa was believed to have been

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reborn in a child born two years later. The child became his successor, and thereafter this interesting system of re-incarnation has been adopted and pursued up till the present day.

Rule of the Dalai Lamas. The third incarnate lama was Sonam Gyatso who spread the new faith to Mongolia. As a reward for his efforts, the Mongol chieftain, Altan Khan, conferred upon Sonam Gyatso the title of *Dalai Lama* (Ocean of Virtue), and thus commenced the line of rulers which exists in Tibet until the present day. The fourth Dalai Lama, named Yonten Gyatso, died at an early age. Fifth in succession was Lobsang Gyatso, known as the 'Great Fifth'. Gaining sovereignty of the whole country with the assistance of the Mongols, he assumed divinity and himself posed as the incarnation of Chen-re-si, patron deity of Tibet. Lobsang Gyatso proved a wise and strong ruler, and among many activities he rebuilt the great Potala Palace, much of which had been destroyed during raids by the Mongols. When he journeyed to Peking, he was acknowledged by the Emperor of China as an independent sovereign. To aid the administration a regent named Sangye Gyatso was appointed in the course of the reign. Lobsang Gyatso died in 1680, but the regent managed to conceal the fact and himself ruled the country in the name of the Dalai Lama. When the deception was revealed, Tsang-yang Gyatso was recognized and installed as the sixth Dalai Lama. The dissolute life led by this priest-king caused many Tibetans and Mongols to doubt whether he could be a real incarnation. Finally, in 1706, he was deposed and put to death by the Chinese somewhere in eastern Tibet. The seventh Dalai Lama, Lobsang Késang Gyatso, was then formally installed. Taking advantage of subsequent dissension amongst the people, the Chinese sent an expedition to Lhasa, in the year 1720, which gained a hold on Tibet. The Chinese *ambans* (representatives) intervened in Tibetan administration and put to death the Tibetan regent. The people in their turn massacred the Chinese in Lhasa. However, Chinese authority was soon restored by an army dispatched by the Emperor of China, and the eighth Dalai Lama, Jampal Gyatso, was selected and in-

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stalled. Then followed a succession of four Dalai Lamas all of whom died at an early age. Born in 1876, the thirteenth and greatest of the modern Dalai Lamas, Nga-wang Lobsang Tupten Gyatso, assumed temporal power in 1893. After an eventful reign he died in 1933. His successor, Jetsun Jampal Nga-wang Lobsang Yishey Tenzing Gyatso, was born on 6 June 1935 and was installed at Lhasa in February 1940.

Gurkha Invasions. In the year 1788 the Gurkhas crossed into Tibet and occupied some districts near the Nepal frontier. Three years later they captured the town of Shigatse. An army dispatched by the Chinese Government defeated the Gurkhas, who were forced to conclude a humiliating peace.

Some fifty years afterwards a force of Dogras from Kashmir invaded western Tibet. This expedition was unsuccessful as the Dogras were completely routed by the Tibetans.

The second Gurkha invasion occurred in 1855. On this occasion the resultant treaty secured for Nepal extra-territorial rights, the establishment of an Agency in Lhasa, an annual subsidy of Rs. 10,000, and the right of free trade with Tibet.

First British Connexion. The first endeavour to establish relations between the British and Tibetan Governments was made in 1774. At the instigation of Warren Hastings, then Governor of Bengal, George Bogle, a young writer of the East India Company, was sent on this mission. Subsequently, in 1783, a further effort was made by the dispatch of Lt Samuel Turner to Shigatse. However, neither Bogle nor Turner succeeded in reaching Lhasa, and their visits produced no results, the presence of the Chinese at Lhasa preventing the development of negotiations.

British Expedition. In 1904 differences arose between the British and Tibetan Governments. In order to discuss the question of British relations, commercial and otherwise, with the Tibetan Government, a British Mission with an armed escort set out under the leadership of Colonel (afterwards Sir Francis) Younghusband. Once again the Tibetans refused to enter into negotiations and offered active resistance to the

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British entry. The mission then became a military expedition and eventually reached Lhasa after undergoing great hardships. On arrival it was found that the Dalai Lama had fled to Mongolia. However, a treaty was concluded with the Tibetan Government, the terms of which were: (i) the opening of three trade marts, one at Gyantse, one at Yatung and the third at Gartok; (ii) the abolition of trade duties between Tibet and India; (iii) the payment of an indemnity to the British Government; (iv) prohibition against cession or lease of any Tibetan territory to any foreign power without British consent. Although the expedition withdrew from Tibet soon afterwards, it was not until 1909 that the Dalai Lama returned to Lhasa.

Chinese Invasion and Eventual Eviction from Lhasa. Confidence was gained by the Tibetans after the treaty negotiations with the British, and the relationship between the two Governments became established on a sound basis. This friendliness caused some alarm to the Chinese, who quickly resolved to regain their hold on Tibet. To this end a military expedition was organized. Reaching Lhasa in February 1910, the Chinese proceeded to seize a great part of the administration and to oppress the people. Once again the Dalai Lama and his Ministers fled the country, this time to Darjeeling in India. The hospitable and considerate treatment which they received during their stay in India caused a deep and favourable impression throughout Tibet. With the outbreak of revolution in China in 1911, the Chinese garrison in Tibet mutinied and the Tibetans had little difficulty in expelling them from Lhasa. Once more the Dalai Lama and his Ministers returned to the capital, and, by June 1912, all Chinese control of the country ceased to exist. In recent years the relationship between Tibet and China has improved a great deal. One Chinese officer and his staff are stationed at Lhasa to represent the interests of the Chinese Government in Tibet.

Recent Developments. Towards the end of 1920, in response to an invitation from the Tibetan Government, Mr (later Sir Charles) Bell, British Representative, was deputed to Lhasa in charge of a diplomatic mission. His residence in the

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country for more than a year as a guest of the Dalai Lama, his knowledge of the Tibetan language, and his care in observing Tibetan customs and religious susceptibilities, had the effect of removing previous misunderstandings and inspiring mutual confidence and cordiality.

The writer of this pamphlet was a member of the Young-husband expedition. Subsequently, during several years in Tibet as British Trade Agent at Gyantse and Yatung, he did his best to promote a friendly spirit and to make the British connexion popular. Visits to Lhasa by Lt-Col. F. M. Bailey and Lt-Col. J. L. R. Weir, Political Officers in the Indian State of Sikkim, did much to further good relations between the two Governments.

Since 1926 the Tibetan Government has established a Foreign Office at Lhasa. This has greatly facilitated official communications with foreign Governments.

The present British representative in Tibet, Sikkim and Bhutan is Sir Basil Gould. He was present in Lhasa during the installation of His Holiness the fourteenth Dalai Lama in 1940. By his tact and foresight he has been able to strengthen still further the bond of mutual friendship. He is ably assisted by Mr. A. J. Hopkinson, officer on special duty. A British Mission has officiated at Lhasa continuously since 1936.

The People

The people of Tibet may be classified under four heads: the nobility, the traders, the peasants, and the shepherds or herdsmen.

The Nobility. In possession of most of the wealth and the landed property of the country, the nobility form a class apart and regard the common people as their inferiors. The Tibetan nobleman traces his descent from one of three sources. He may be descended from an ancestor who acquired nobility for meritorious services to the country and who was rewarded by a place on the Supreme Council and the gift of an estate. Secondly, he may be a descendant of a family in which a Dalai Lama or Tashi Lama took his rebirth. In such cases he is *ipso facto* ennobled and receives large estates from the Government. The descendants of

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Tibet's early monarchs represent the third section of nobility.

The Traders. Though there is no real middle class, the trading community occupies an intermediate position between the landed gentry on the one side and the peasants and shepherds on the other. Naturally endowed with keen commercial instincts, every Tibetan is a born trader. Nobles and monks alike engage in trade, and the large monasteries operate on an extensive scale.

Commercial dealings requiring long journeys are carried on by the menfolk, whilst the women manage the shops and small retail trade.

The Peasants. Arable land is plentiful in Tibet but is not greatly developed due to the lack of man-power. This is occasioned by great numbers of the male population adopting priesthood and living celibate lives in the monasteries, which results in a steady decline in the birth-rate. The problem of distribution of labour is aggravated by the fact that a peasant is not allowed to quit his land without first obtaining his landlord's permission. The social distinction between landlord and peasant is very great, even to the extent of requiring deep obeisance on the part of the latter when addressing his master.

Shepherds and Herdsmen. Hardy, robust and independent, these people live a nomadic life in the uplands. Once a year they descend to lower levels to sell their produce of wool, salt, yak tails and butter. Before their return, such necessities as barley, wheat, tea and woollen cloths are purchased, as these are unprocurable in the uplands. The butter made from goat's milk is consumed by the poor people only, whilst that made from the milk of the *dri* (female yak) goes to the richer folk or the gentry.

The Women. A remarkably good status in Tibetan social life is enjoyed by the women. Quite free from seclusion, they have much influence in home affairs and business. Physically they are strongly built, with plump well-developed figures. Women of the peasant class, in addition to their ordinary domestic duties, labour in the fields with their menfolk. Their other activities include collection of yak-

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dung fuel, tending cattle, yarn-spinning and cloth-weaving, milking and butter-making. In business dealings, Tibetan women are always keen to drive a bargain. Indeed they are often more astute than the men in this respect. Education among women is rare.

Numerous ornaments set with coral, jade and turquoise are worn by the women. Chief among these is the head-dress which indicates whether the wearer is married or single, the custom being to place a turquoise over a coral at the back of the head-dress on marriage. The poorer women smear their faces with caoutchouc.

Marriage. The selection of a partner in marriage is made by the father. A son is first consulted, but a daughter has little or no choice. Wedding ceremonies vary to some extent according to the different provinces and districts. Before a marriage can be arranged, an astrologer is called in to ensure that the horoscopes of the prospective bride and bridegroom agree. An agreed sum of money is paid to the bride's parents. On an auspicious day, decided by the astrologer, the bride leaves her home for the bridegroom's house. The ceremony itself is attended by prayers, blessings and the exchange of ceremonial scarves and presents, and is followed by much feasting and merriment.

Monogamy, polygyny and polyandry are all prevalent in Tibet. Polyandry is practised mostly among nomadic families. In this form of marriage the husbands are usually brothers. The wife, on marrying one brother, then marries the younger brothers in the family but not those older than her first husband.

Dress. The dress of all classes and both sexes consists of a full double-breasted, loosely-cut gown called a *chhu-pa*. It is buttoned at the neck, the front of the shoulders, beneath the right armpit and above the side of the right knee. Tied tightly round the waist with a cotton or woollen band, it is puffed out above to form a capacious pocket, which is utilized by the poorer classes for carrying drinking-cups, snuff-horns and other odds and ends. Beneath the *chhu-pa* is worn a long-sleeved shirt reaching only to the waist. The legs are clothed in trousers which are gathered tightly at the ankles.

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Socks and tall boots are worn, these latter being of Tibetan cloth, felt or leather, in various colours. The winter garb of the peasants and shepherds is made of rough dried sheepskins with the fleece worn inside.

The dress of the upper and lower classes contrasts greatly in appearance and quality. The high dignitaries must wear silk on official occasions, but this material is not permitted to people of lesser status. The wearing of earrings is common, those of the upper classes being set with turquoise and pearl. The costume of high-class Tibetan women is most attractive and is enriched by the wearing of ornaments and much jewellery.

Food and Drink. The chief diet of the ordinary Tibetan is yak's meat, mutton, barley flour and tea. Barley forms the chief cereal food. Crushed into flour, it is mixed with butter, cheese or meat and thus becomes the staple food. Fruits and green vegetables, sparsely grown in Tibet, and rice, a luxury, are only consumed by the richer folk.

Tea, prepared in its peculiar form, is the national beverage of the country. Brick tea from China is deemed more nutritious and tasteful than Indian tea. A requisite quantity of leaf is cut from the brick and is thoroughly boiled in water. After re-straining, the liquor is poured into a long narrow churn. Salt, soda and butter are then added and the mixture is well churned. Enormous is the consumption of this tea among Tibetans, who frequently drink thirty to fifty cups a day.

A beer, called *chang*, brewed from barley, is also a popular beverage throughout the country.

Dwellings. Houses in Tibet are invariably square in design and have only one entrance. The walls are built of flat stones set in mud. The roof is flat and is formed like the earth floor.

Large and commodious, the residences of the Tibetan upper class are sometimes as much as four stories in height. Usually they are built around a courtyard which serves as a convenient place for attending to transport animals, for drying clothes and other domestic purposes. The main family living rooms and kitchen are on the ground floor. Modern sanitary arrangements are non-existent, the usual

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practice being to set apart a ground-floor room to be used as a lavatory by all the occupants, including the servants. The upper stories are used as servants' quarters, store-rooms and extra apartments. Next to the general living room may be the family chapel, which is always kept scrupulously neat and clean.

As a rule, the houses of the peasantry are solid and substantial; they are never more than two stories in height. The animals are housed on the ground floor. The shepherds and herdsmen dwell in black tents of yak hair, which may be seen dotted over the plains in Tibet wherever grazing is to be had for flocks and herds.

Festivals. The Tibetan year is marked by numerous saints' days and festivals, in which both lamas and laity take part. In addition to the great national days, each locality has its own particular auspicious days on which the tutelary deities are worshipped and local religious ceremonies performed. The eighth, the tenth, the twenty-fifth and thirtieth days of each month are considered specially auspicious, also full moon and new moon days. On these last two days the people make their way to the local monastery clad in gala robes and carrying offerings of flowers, incense and money. Butter is also presented for the sacred lamps on the altar. The presentation of offerings to the gods is followed by prostration before the altar and the performance of devotions.

The most important yearly event is the New Year or the Great Prayer festival at Lhasa. Commencing on New Year's Eve, which usually falls sometime in February according to the Tibetan calendar, the ceremony and celebrations last the greater part of a month. Firstly, houses and doorways are decorated with boughs of juniper, puddings are prepared and a stock of wine laid in. The people pass the time in eating, drinking, dancing, singing and all kinds of merry-making, combined with prayer when they feel so inclined. On the morning of the third day begins the *Monlam* or the Great Prayer festival. From the dawn of the new year, monks from Sera, Drepung, Ganden and other monasteries begin to pour into the city of Lhasa. By noon, over twenty

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thousand priests are found assembled there. The next ten days are occupied by religious services, held thrice daily in the Jokang, the great temple at Lhasa. The festival of lights is performed on the fifteenth day of this month of prayer. All the local monasteries and larger houses in the district are illuminated with thousands of small butter lamps. The twentieth day marks the commencement of the sports, in which one of the most important events is horse-racing.

During each year's prayer festival, the civil and military Government of the city of Lhasa is removed, one of the high lamas of the Drepung monastery being substituted and invested with temporary authority. This lama proceeds in state to Lhasa on the third day of the month and assumes the sovereignty of the city.

National Characteristics. As a people, the Tibetans are cheerful and happy-go-lucky. Religion is by far the most important influence on their lives. A marked characteristic is the scrupulous observance of etiquette and ceremony in everyday social life. The form of address to be used toward a social superior, equal or inferior, the presentation of ceremonial scarves, and many other courtesies, are rigidly maintained by all classes.

Religion

The Old Faith. The earliest form of worship in Tibet was known as Bon, a form of Shamanism or Nature-worship. Divination, the expulsion of devils who brought sickness and other ills, propitiation of various spirits and the sacrifice of animals were among the fundamentals of the old Bon religion. Until the introduction of Buddhism in the 6th century A.D., devil-worship was unrivalled. From this time on, however, it showed a gradual diminution in strength.

Buddhism and Lamaism. Buddhism became the State religion of Tibet about A.D. 650, during the reign of King Song-tsan Gampo, who had two Buddhist wives. After his death, however, it made little headway against the prevailing Shamanist superstitions. About a century later, King Ti-song Detsan, a powerful descendant, made strenuous efforts to establish the new religion. This monarch induced the

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establishment of a new order by Padma Sambhava, the great Indian Tantric teacher known as *Guru Rimpoche*, the 'precious teacher'. Realizing that the old Bon faith still had a great hold on the minds of the people, this priest decided to incorporate many Bon beliefs, practices and duties into the Buddhist ritual in order to make the change more acceptable. Thus Padma Guru Sambhava became the founder of modern Lamaism. Once established, Lamaism made steady progress and was actively patronized by Ti-song Detsan's successors for the next two generations. Buddhism found a zealous supporter in King Ralpa-chan, and after his reign the Lamaist church grew steadily in size and influence, until it reached its present vast dimensions and established the sovereignty of the priest-kings at Lhasa.

Reformation. At the beginning of the 11th century numerous Indian and Kashmiri Buddhist monks began to frequent Tibet. Notable among these was Atisha, a native of Bengal (known by his name of Dipankara Sri-jnana) who, aided by his disciple Dromton, founded a new reformed sect called *Kadam-pa*. Three hundred years later this became the *Geluk-pa*, now the dominant sect in Tibet and the established church of the country. The reformation of Atisha resulted not only in the establishment of his own sect; but two other semi-reformed sects, the *Kargyu-pa* and the *Sakya-pa* which also came into being. Although founded by Marpa, it was his pupil Milarepa who was responsible for the establishment of the *Kargyu-pa* sect. Having developed into a powerful hierarchy, the *Sakya-pa* sect attained for a time temporal sovereignty over the greater part of Tibet. Later, however, it was eclipsed by the rise to power of its rival, the *Geluk-pa*.

The Yellow Hats. Early in the 15th century, the *Kadam-pa*, Atisha's sect, was reorganized by another reformer, Tsong-kapa, and thus was founded the sect known as the Yellow Hats. This sect grew rapidly in power and in the space of five generations succeeded in occupying the pontifical throne of Tibet. The line has been maintained in unbroken succession until the present day.

Tsong-kapa was followed by Gedun Truppa, founder

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of the great monastery at Tashi Lhumpo. Later on this establishment was to become the residence of the Tashi Lama, the Grand Lama who is second only in rank to the Dalai Lama. After his death in 1474, the spirit of Gedun Truppa was believed to have entered the body of an infant born two years later. This child became his successor and thus was initiated the system of priestly incarnation.

Sonam Gyatso was the next incarnated head of the Yellow church. In reward for his success in spreading the faith throughout Mongolia, he received the title of Dalai Lama Vajradhara from the Mongol chieftain Altan Khan. From then on Buddhism steadily gained in strength, and the title of Dalai Lama was held in turn by each successive head of the Yellow church.

Modern Lamaism. The form of Buddhism practised in Tibet is called Lamaism after the Tibetan priestly title of lama. This faith is not a radical transformation of Indian Buddhism by Tibetans. It is essentially of the very same type as the theistic or *Mahayana* (Great Vehicle) form of Buddhism. Lamaism is a priestly mixture of Shamanist cult, Tantric mysticism, devil-worship and Indo-Tibetan demonolatry, touched here and there by the brighter lights of the teachings of Buddha. As practised in Tibet today, the faith is not merely a monastic brotherhood, it is a truly popular religion, deeply pervading and dominating the life of the Tibetan people.

Lamaist Pantheon. Perhaps the largest in the world, the Lamaist pantheon contains innumerable gods, saints, demons and canonized evil spirits. The most important gods are Buddha, Amitabha and Avalokiteswara. Next come the potential Buddha, the Bodhisatvas, including many Indian saints and apotheosized lamas. The *tutelary deities*, which are mostly demon-kings, follow in rank above the *Defenders of the Faith*—the demon generals and commanders-in-chief who execute their wills. Next rank the *Indian Brahmanical gods*, godlings and angels. Then come the *country gods* and *guardians* and *local gods* which are chiefly the spirits of the larger mountains and deified ghosts of heroes and ancestors. Finally, there are the *personal house gods*, the

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familiar spirits who reside by each hearth and are held responsible for sickness and many other evils within the household.

Monasteries. Immense influence is wielded by the strongholds of Lamaism, the monasteries. There are over three thousand of these institutions in Tibet, some of them being of enormous size.

Five miles from Lhasa is Drepung, the largest and most powerful monastery. Here about ten thousand monks are in permanent residence. The monastery at Sera, containing some seven thousand lamas, lies about three miles to the north of the capital. Ganden is regarded as the greatest centre of learning in Tibet and is a monastery of considerable size and importance.

The architecture of the monasteries seems to be medieval in style and is generally of an ostentatious character. The chief building contains the assembly hall and other smaller halls for teaching purposes. Since they are used as residential colleges, the living quarters consist of long rows of cells, two or three stories high, usually surrounding a courtyard.

All these institutions rely mainly on the lay population for financial support, although the State has richly endowed many of them with landed property. Due to the numerical preponderance of the lamas, the tax for their support is a heavy burden on the people.

Priesthood. The many privileges and supreme position enjoyed by lamas attract enormous numbers of recruits. From nearly every family at least one member is dedicated to the priesthood. Usually the firstborn or favourite son, the child destined for religious life, stays at home until about his eighth year. At that age he is sent to a monastery for training and is educated as in a kind of boarding school or residential college. He must pass through the stages of pupil probationer or *ge-nyen*, novice or *get-isul* to fully ordained monk or *ge-long*. As a real Buddhist monk he must observe no less than 253 vows. Monastic life imposes rigorous discipline, celibacy and abstinence upon its followers.

The dress of a monk consists of a hat covering his closely shaven crown (on ceremonial occasions), a gown and a girdle;

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inner vest, cloak, plaid, trousers and boots. A rosary is carried, and other religious equipment.

The lamas' diet is composed mainly of wheat, barley or buckwheat, and occasionally rice. The only flesh meat permitted is sheep, goat or yak. Soup, milk and tea are the chief beverages.

Government

The ruler of Tibet is the Dalai Lama, who wields supreme temporal as well as spiritual sovereignty over his country. As the viceregent of Buddha on earth, His Holiness the Dalai Lama occupies a position unique among the rulers of mankind. Not confined to Tibet alone, his spiritual authority covers also Ladakh, Sikkim, Bhutan, Turkestan, the Buriat country, Eastern Siberia, and the Kalmucks in European Russia.

Aided by the State Oracle at Lhasa and the Oracle at Samye, the Dalai Lama apparent is selected by the heads of the three great State monasteries of Drepung, Sera and Ganden. When seven years old or even younger the Dalai Lama elect is brought to Lhasa and takes residence in the palace known as the Potala. During his minority a regent conducts the government, but at the age of eighteen the Dalai Lama is invested with full powers.

Perhaps the most autocratic ruler in the world today, the Dalai Lama has absolute powers. He appoints and dismisses officials. His judgement is invoked in all cases of importance, civil, criminal and administrative. All questions are put into writing and placed before His Holiness. Below each matter on which orders are required is written the sentence 'To be or not to be'. The Dalai Lama signifies his commands by placing a dot of bright blue ink, which no other person is permitted to use, over whichever of these two phrases he desires.

To assist in the administration, His Holiness appoints an official called *Silon* whose duties correspond to those of a Prime Minister. This official acts as the intermediary between the *Kashak* or Council of Ministers and their ruler. The *Kashak* consists of four members called *Shap-pes*, each of whom holds one or more portfolios in the Government.

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The administration is divided into Departments of Justice, Agriculture, Revenue, Army, Police, etc., and the Dalai Lama himself deals with matters of foreign policy.

In addition to the *Kashak* there is another council, the *Tshongdu* or National Assembly, which is occasionally summoned to discuss questions of national importance. It is composed of all State officials of, and above, fourth rank, the abbots of important monasteries in and around Lhasa, and certain of the great landowners. Totalling 350 in number, the State officials in Tibet are made up of an equal proportion of priests and laymen.

For administrative purposes Tibet is divided into 13 provinces, which in turn are subdivided into 53 districts. Governors, with wide powers, are appointed to certain of the provinces, whilst magistrates preside over each district. The district officials, called *jongpens*, are responsible for the maintenance of law and order and the collection of revenue within their territory. Priests not only exercise influence over the State through the monasteries, but several of them also serve the Government in secular capacities, both civil and military. The Lord Chamberlain and the Chief Secretary are leading officers in the household of the Dalai Lama. The former is head of all the ecclesiastical officials in Tibet, and the latter acts as the medium of communication between His Holiness and the outside world.

Since 1914 the Tibetan army has been strengthened and is now trained and equipped more efficiently than before. The chief obstacle to expansion is the difficulty of raising additional revenue to support the new army. The enormous cost to the State incurred by the upkeep and maintenance of the monasteries leaves little for other expenditure. Of the country's entire revenue, approximately one-half is absorbed by the monasteries and one-fourth by the nobles, with the result that other expenses must be met with resources greatly diminished.

Situated on a low hill outside the city of Lhasa is the Potala Palace, the residence of the Dalai Lama. Eleven stories in height, it is the most imposing edifice in Tibet. Around the central pile are grouped buildings which serve

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as monasteries, offices, and the quarters of the large resident palace staff. Above the apartments of the Dalai Lama are gilded roof-pavilions visible for miles around. Within the palace are large audience halls, reception halls and throne rooms. Images of great historical and religious interest are found in some of the smaller apartments. Among them are the life-size effigies of King Song-tsan Gampo, his two Buddhist wives and his famous minister Lonpo Gar. Seldom seen by lay eyes is a life-size solid golden image of Chen-re-si, the patron deity, who is incarnate in the Dalai Lama. In another chapel is a sandalwood image of the same deity believed to have been made by miracle in Ceylon. One of the most interesting rooms in the palace is that formerly occupied by the fifth Dalai Lama, Lobsang Gyatso, the 'Great Fifth'. *Namgyal Choide* is the private monastery of the Potala and among its monks the Dalai Lama takes his place as an ordinary priest. In the inmost recesses of the palace is the private treasury of His Holiness, where immense wealth, the accumulation of centuries, is stored. The bodies of the past Dalai Lamas are enshrined in lofty *chotens*¹ in the central Red Palace. In the same building on the top floor are the private apartments of His Holiness. These consist of a suite of rooms, a private chapel, a small audience chamber and several other offices. Below this floor are State reception rooms and the throne room in which the Dalai Lama holds Levees and Grand Audiences.

Trade, Industries and Art

So deep-rooted is the love of buying and selling in the people of this land, that those who do not adopt trading as a profession usually indulge in it as a side-line to agriculture. The Government of Tibet itself, the monasteries, and even the Dalai Lama and his high officials have their own private Trade Agents. In many cases, State officers do not scruple to carry on business openly in their own names.

Exports and Imports. Wool is by far the largest item of export from Tibet. The commodity is purchased directly

¹ Reliquaries, usually built of stone.

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from the nomadic shepherds by traders through their agents, and is resold to exporters at a convenient mart. A monopoly of the direct export trade is held by the traders and carriers. The important dealers advance money to those in business on a smaller scale and thus are enabled to secure their whole collection. In their turn these exporters receive large advances from foreign buyers, usually Indian marwaris, who finally fix the purchase price. The largest market of the Tibetan wool trade is at Kalimpong, better known as a health resort in the district of Darjeeling. Half the entire trade between Tibet and India passes through this thriving town. Except in the bigger centres, trade is carried on by barter, and for this purpose periodical fairs are held in suitable places. On these occasions the nomads descend from the uplands to barter wool and dairy produce for flour, salt, tea and other necessities. Owners of large flocks collect their wool for sale in Indian markets at the heads of the valleys leading to India. Beasts of burden are the means of transportation, chiefly mules, but also donkeys, yaks and *dzo*, which last is a cross between the yak and the domestic cow. Sheep are sometimes used for transporting light loads, especially in western Tibet, where borax, salt, etc., are carried in panniers up to a weight of twenty pounds on each side.

Besides wool the principal exports are yak-tails, furs, musk, *pasham* (soft under-wool of the shawlwool goat), borax, salt, medicinal herbs, ponies and mules. The imports from India include cotton goods, corals, precious stones, rice, sugar, tobacco, hardware and miscellaneous oilman's stores. From China come brick tea, silk, satin, brocade and cotton goods. In every town and most of the larger villages, a daily bazaar is held at which the local people take the opportunity of disposing of surplus produce and homemade goods such as butter, eggs, rugs and blankets. The stalls are usually presided over by the women, who take a large part not only in petty trade but in managing large business concerns in the absence of the menfolk.

Industries. Practically every household has its own home industries. Cloth-weaving and carpet-making are chief

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among these. Using handlooms and primitive methods of weaving, the Tibetan produces fine specimens of cloth. Very popular are the thick blankets woven of sheep wool called *chuktuks*. Used extensively in private houses and monasteries, carpets are made in great numbers and the finished article displays excellent workmanship. Usually vegetable dyes are used in producing the various colours, all except indigo being made in Tibet.

Tibetan silversmiths and goldsmiths show great skill in their craft. There is a large colony of the former at Shigatse and of the latter at Lhasa. The silver cup-stands and covers used in every Tibetan home come from Shigatse. The poorer people use replicas of these utensils fashioned from less costly metals. Artistry in metalwork is very evident. Some of the designs in ironwork are as delicate as lace. Dragons, volutes and geometrical patterns mingle in detailed and balanced designs. Saddle ornamentation, pen-cases, quivers and censers are also executed in repoussé work. The designs on vases are sometimes Indian and sometimes Chinese in character. Tibetan jewellery, set with turquoise and other semi-precious stones, includes earrings, necklaces and bracelets. Most of the charm-boxes worn by the womenfolk are made at Lhasa. A great variety of metal teapots, copper prayer-wheels, images of Buddha, lamps and other articles are manufactured. Bronze, brass and iron are among the metals worked.

Wood-carving displays fine examples of Tibetan craftsmanship. It is exhibited in fine statues, but really excels in the low reliefs adorning the rectangular pieces of wood used as covers for the sacred books.

Paper is made near a source of water, usually just outside each of the larger towns. Large monasteries where printing is done maintain their own paper-making staffs. All the processes for paper manufacture are performed by hand. The bark of a tree of the genus *Daphne* is used for the coarse-quality product. Finer and more expensive grades are manufactured from the roots of a poisonous plant found in the country. Extremely tough and durable, its poisonous origin renders this paper free from attack by insects.

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Only comparatively recently have the Tibetans been manufacturing fire-arms. They are now able to turn out a very fair copy of the rifles used by the Indian Army.

Art. Tibetan art appears to be a continuation of the medieval Buddhist art of Bihar and Orissa, which were dominions of the Pala kings and the 11th-century strongholds of Indian Buddhism. Although to a large extent determined by the climate and the nature of the soil, architecture shows evidence of pronounced Indian and Chinese influence.

Painting. As a general rule, Tibetan paintings follow a religious theme and many are strongly reminiscent of Indian art. One of the most ancient subjects is Maitreya, the coming Buddha in the form of a young man. These paintings are somewhat rare. Certain of the works depicting the life of the Buddha Sakyamani are derived from Indian originals of the 9th and 10th centuries A.D. Many reproductions are to be seen in various European museums. Drawing inspiration from a biography dating from 1734, Tibetan artists of the middle 18th century composed an abundantly illustrated life of the Bodhisatva. These more modern pictures, with an infinite variety of scenes, are all composed around a central figure of Buddha. Saints of Indian Buddhism and of Lamaism have proved most popular subjects for paintings. Artists appear to have a marked fondness for depicting venerated places in their works. One such picture, in a sort of rough perspective, represents the principal religious establishments of Lhasa. Treated in minute detail, the central object is the Potala Palace with the great Jokang temple in the foreground, against a background of the monasteries of Sera and Drepung and a number of smaller places of worship.

Language and Literature

Language. The Tibetan language is allied to Burmese languages and forms with them the Tibeto-Burman family. Comprising several dialects, the language is classified into three main groups, (i) the dialects of Lhasa and the central provinces of Ü and Tsang; (ii) the western dialects of Ladakh, Lahul, Baltistan and Purang; and (iii) the eastern

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dialects of the province of Kham. Many sub-dialects of Tibetan are spoken in the frontier Himalayan districts and States outside Tibet. Despite the diversity of dialects, that of Lhasa is more or less understood all over the country.

For the proper study of Tibetan, it is necessary to undertake the learning of four styles: the colloquial, the book language, the honorific and the high honorific. In addition to these, the language used in the Tantric cults and the Sanskrit used for spells and charms is required for the study of Lamaism in its various phases. The Tibetan alphabet contains five vowels and thirty consonants and the script is read from left to right, as in English. Two kinds of characters are used in writing: *wu-me* or longhand, and *wu-chen* or capitals.

Literature. The beginnings of the literature of Tibet coincided with the introduction of Buddhism to the country. During the reign of Song-tsan Gampo, in the middle of the 7th century A.D., an alphabet was compiled after the Indian Devanagiri Sanskrit character. The Tibetan tongue was reduced to grammar, and translations were made from Pali and Sanskrit manuscripts. First came an era of translations of Indian Buddhist classics by the lamas, as a result of whose efforts Tibetan literature increased rapidly in volume. However, much of their work was wantonly destroyed during the persecution of followers of the Buddhist faith in the reign of the apostate Lang Darma. His assassination brought to an end the period of vandalism. In 1025, scholarly work was resumed with redoubled energy and the time was marked with such prolific writers as Milarepa, Atisha and his famous disciple Dromton. Now began to make their appearance writings other than those on religious matters, in the form of works on history and books of secular verse and folklore.

The second period began in the 15th century, when, encouraged and patronized by the Emperor of the Ming dynasty of China, Tibetan scholars turned their minds towards Chinese literature to acquire style and ideas. It was during this period, called *Da-nying* or the 'era of the old orthography', that the great mass of purely Tibetan literature

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arose. Contemporary were Tsong-kapa, the founder of the *Geluk-pa* sect, and Sangye Gyatso, an able but unscrupulous regent, under whose auspices commentaries on the scriptures, works on law, medicine, astronomy and astrology were compiled.

With the establishment of the Dalai Lama on the temporal throne opened the third period of Tibetan literature. China had acquired a certain ascendancy over the country and her influence is abundantly evident in the literary work. Secular works began to appear in large numbers, and despite the fact that most of the books written were still of a religious nature, authors adopted the habit of weaving a religious theme into their fiction.

Books now abound in Tibet, nearly all dealing with religious subjects. The secular works compiled are, however, mainly annals or chronicles, tales more or less fabulous, collections of proverbs and clever sayings, folklore and drinking songs.

Scriptures. Compiled mostly in the 8th and 9th and the 11th to the 13th centuries, the Lamaist scriptures are faithful translations from the Sanskrit text with a few from the Chinese. They include a few small volumes dating back to the epoch of Thomni Sambhota, about A.D. 645, which were among the earliest translations into Tibetan. The scriptures consist of two great collections, the *Kangyur* or canon of Buddhist law and the *Tengyur* or commentary on the canon of Buddhist law. The former, known as the 'Translated Commandments', extends to 108 volumes whilst the latter runs into 225 volumes. The scriptures receive divine honours. They are held materially sacred, placed in high places and worshipped with incense and lamps, and even fragments of books or manuscripts bearing holy words are treasured with the utmost reverence. Read only by the lamas, the volumes are replaced in their pigeon-hole shelves with a mumbled prayer and a blessing.

A Tibetan religious book, with its wooden covers, may weigh thirty pounds or even more. It is usually a couple of feet in length, six or eight inches in breadth, and six inches to one foot in depth. The large monasteries possess

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the best libraries, lined with pigeon-holes in which the books are stored. Each volume has a silk tab on which is written the title. The scriptures themselves are usually placed on either side of the altar. All the older books in Tibet are in manuscript, some of them being beautifully illuminated with miniature paintings of gods and saints, various lucky signs, and other conventional religious symbols.

A great quantity of Lamaist literature has found its way to various collections in Europe. Most of it was obtained from Pekin, Siberia and Mongolia. That which is at the India Office, the Royal Asiatic Society in London and the University of Oxford was collected (mainly) by the Young-husband Mission or by Mr B. H. Hodgson of Nepal.

Printing. It is not known when printing, or rather xylography, was introduced into Tibet, nor by whom. Certainly it was not known earlier than the middle of the 17th century. No type is used, but the characters are carved in relief upon a block of hard wood of suitable size. This is then inked and impressed on paper. The number of xylographs required to print the *Tengyur* with its twenty-five-thousand double-sided pages is colossal. The few printing establishments in Tibet are attached to the larger monasteries. The *Kangyur* and the *Tengyur* are printed only at the presses at Narthang, near Shigatse, at Kumbum, a large monastery in Kham, and at Derge.

Exploration

Visits to Tibet from the outside world have been few. There have been long intervals of time between such venturesome travellers, nearly all of whom have left behind some record of their journeys. Always there is the same story of exceptional hardships and perils that have been encountered.

Early European Visitors. The first European to have reached Lhasa seems to have been Friar Odoric of Pordenone about A.D. 1330. Little is known of his journey. In the early 17th century, Tibet was visited by the Jesuit priest Antonio da Andrada, a Portuguese. He appears to have entered the country in the region of Lake Manasarowar travelling from India, and his impressions were recorded in a book which was published on his return. Towards the

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end of the same century, Capuchin fathers, Joseph de Asculi and Francisco Marie de Toun, entered Lhasa from Bengal. Some years later one European traveller, Dr Samuel Van de Putte of Leiden, who reached Lhasa by way of India, is said to have resided in the city for a considerable time. In 1741 a Capuchin Mission under Orazio della Penna succeeded in reaching Lhasa and becoming established there. The information accumulated by the Mission was passed to a Father Giorgi who used it as material for his book *Alphabetum Tibetanum* published in Rome in 1762. The Lazarist missionaries Huc and Gabet made their way to Lhasa in 1845 and Huc's entertaining account of the journey is well-known. Later, however, he was expelled from Tibet, and since that time until recent years China has aided Tibet in opposing the ingress of foreign visitors.

First English Visitation. The first Englishman to visit Tibet was George Bogle, a writer of the East India Company. In 1774, on the authority of Warren Hastings, he was sent to visit the Tashi Lama at Shigatse to survey the possibilities of trade between Tibet and the East India Company. Lt Samuel Turner was dispatched on a somewhat similar mission in 1783, also to Shigatse. Nothing resulted from these endeavours.

In 1811 Thomas Manning, a friend of Charles Lamb, reached Lhasa. The whimsical personal diary which records his journey contains little information of importance.

Recent Exploration. Between 1889 and 1892, W. H. Rockhill, an American explorer, made two journeys through the northern and eastern districts of Tibet. By reason of his possessing a fair knowledge of the language and the history of the country, his record of his travels is regarded as a valuable contribution to the world's knowledge of Tibet and its people. About this period quite a number of explorers and visitors penetrated the country and nearly all have left some recorded impressions. Very important was the work of Sir Aurel Stein, who visited the country in 1898 and made a considerable collection of Tibetan books, at the same time gathering information which has been of great value.

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Notable among explorers of Tibet was Dr Sven Hedin, who made several journeys to the country between 1895 and 1908. Spending two years there he crossed Tibet from north to south and from east to west. Twice he attempted to enter Lhasa disguised as a Mongol. The chief result of his exploration was the discovery of a great range of mountains north of the Himalayas, to which he gave the name of Trans-Himalaya. His carefully drawn and detailed maps, his scientific, hydrographic, geological and meteorological observations, have placed him in the forefront of modern explorers.

Indian Explorers. From 1863 onwards, some Indian explorers were sent by the Government of India to Tibet for the purpose of making a survey of the country and collecting information about the people. The suspicious nature of the Tibetans about the movements of foreigners made their work extremely difficult and dangerous, but the result was, on the whole, very satisfactory.

Pandit Nain Singh, the first of these explorers, reached Lhasa in the course of two remarkable journeys. In the first, he travelled by the Manasarowar Lake and thence eastward by the road parallel to the course of the Tsangpo (Brahmaputra) River, arriving at the capital in January 1866. Some sixteen months later he returned to India. On the second journey in 1874, he started from Ladakh and crossed the vast lofty plateau by Lake Tengri Nor, once more to reach Lhasa.

In 1878, Pandit Krishna (known as A.K.) also visited the capital, where he resided for about a year. In the following year, Sarat Chandra Das, a Bengali schoolmaster at Darjeeling, made a secret journey to Lhasa in disguise. He returned from his journey bringing with him a number of valuable and interesting books in Tibetan and Sanskrit, some of which he edited and published later. When the loss of these books was discovered, the Tibetans became enraged. Their distrust of the motives of visitors was so strengthened that strict precautions were taken to prevent further intrusion by foreigners.

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The Present and the Future

Tibet is an ideal buffer state. With its lofty altitude, its great size, its large desolate area of the northern plains, buttressed by the Himalayas to the south together with the border States of Nepal and Bhutan, it forms one of the strongest land frontiers in the world. As such, Tibet affords India the best possible protection.

Shut off from the outer world for centuries, Tibet is extremely conservative in her ideas. She desires freedom to manage her own affairs without interference from foreigners. Her people disapprove of rapid development of their country by means of railways, roads, electricity, etc. They are very suspicious of attempts by foreigners to explore or visit their country, and past experiences have shown that these journeys have proved more harmful than beneficial to the relations between Tibet and India. Tibet should therefore be allowed to develop quietly and slowly along her own lines and all attempts to Indianize or Anglicize the country should be avoided.

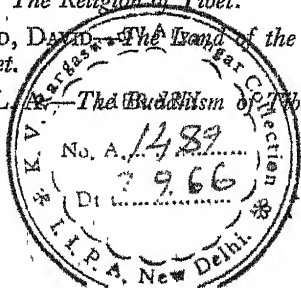
The present attitude of Tibet is one of cordial friendship with Britain. She regards British India as a helpful and friendly neighbour, who is willing to accord her facilities towards the establishment and preservation of her internal and external security. It may therefore be that Britain, with her tact, sympathy and friendliness towards Tibetan aspirations, and her capacity for getting on well with the people of this Hermit Land, will be able to maintain the existing spirit of friendliness and to foster its growth still further in the years to come.

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